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Dissertations

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I.

Dissertation

on

Lepra tuberculosa.

By

Benn Reeve Abbe

of Boston, Massachusetts.

I propose to give some account of that truly formidable malady, Lepra Tuberculosa, the true, or Tuberculous Leprosy of Eastern Countries- It should not be confounded at all with Elephantiasis, (with which complaint it has very little analogy) as it has been by some writers, inasmuch as the difference between the two diseases is very great, as regards their situation, symptoms and nature- distinctions which it is not my present purpose to more than thus briefly mention-

This disease, of which I am to treat, has been a prominent one in the history of Medicine. First making its appearance in Africa, so far as we know, it has since extended to every other Continent, and afflicted almost every nation. During the Middle Ages it prevailed universally, and was accurately and minutely described by the Medical Writers

of that period - There can be but little doubt that it is, tho' denied by some writers, intrinsically of the same nature as the Leprosy of the Jews - tho' the account given of it in the Scriptures is too meagre to afford a very deffinite notion of its character as it prevailed in those times -

Two origens have been assigned to Leprosy - One account represents it as originating in the most remote ages, on the banks of the Nile, generated by "the habits, modes of living, and circumstances"# of closely crowded communities, and from thence spreading far and wide - Occasionally breaking out with great vehemence, it has ravaged whole nations, as was particularly the case from the tenth to the sixteenth centuries during what is called the Dark Ages, and never, at any time, entirely disappearing. Its greater virulence during that time, was probably owing in a great measure to

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the customs of the people, more especially as regards their food and dress - When we consider that vegitables were not used at all as articles of food in those times, and that the grains consumed were oftentimes unfit for use - that fish and the flesh of animals, which were generally smoked or dried before consumption, together with oils of various kinds, constituted nearly the whole diet of both rich and poor, and that all these articles were often eaten in a rancid or half decayed state - that salt as a condiment was almost entirely unknown - that the principal part of the dress, at least the article worn nearest to the skin was in all cases woolen - and, as habits of personal cleanliness were not at all prevalent, of course that garment, retaining from its nature the perspiration, would of itself, prove a great and constant source of irritation to the skin - that exposures to every

vicissitude of climate, and every change of weather were extremely frequent from the imperfect habitations of the poorer classes especially - that the soil was but partially cultivated, and the evils incident to an unsettled state of society during those troublesome times very great - we are not greatly surprised to find even so severe and loathsome a disease as this prevalent under such a state of things - I have been informed by Dr White for some years Missionary in China, that such, in almost every particular is the case universally among the Chinese at the present day, and among all classes - and no where is Leprosy more prevalent. Such also we may reasonably suppose must have been the state of things during the earlier ages, and wheresoever, in all ages, Christianity and consequent civilization have not enlightened the mind -

From all these facts it seems not irrational to conclude, That Leprosy was formerly generated by a Disordered and Impaired

Nutrition, resulting from filthy personal habits, and barbarous modes of living-

On the other hand, quite a different origen has been assigned to it by some writers- They consider it to be identical in all respects with Syphilis- and in confirmation of this theory, among other facts, a case of Leprosy is mentioned by Dr Valentine Mott, in his Travels in the East, which he saw in Athens, in which the beginning and progress were precisely the same, while the symptoms of the disease were the same in kind as those of Syphilis, differing in degree only- Moreover, Syphilis appeared about the fifteenth century in Europe, while Leprosy, which had prevailed Epidemically for the Eight centuries previous to that time, disappeared almost entirely as such at that period- hence, it has been concluded that the disease did not become extinct at all, but still remained, under the name of Syphilis, as before, in its essential nature- It is very probable, that having

had the same origen far back in the past, various ~~of~~ extraneous circumstances have since produced the appearent difference in the present appearances of the two diseases. Besides, I would here remark, that they are even now propagated in precisely the same way, that is by innoculation and hereditary descent. I apprehend also that Leprosy is the original and first form of the disease, which has become constitutional, and even breaking out spontaneously under favorable circumstances - whereas Syphilis is only a modified variety, occurring in uncontaminated constitutions, and in those and whose "habits, modes of living and circumstances", are elevated above those of the wretched and degraded masses of Eastern countries and the Southern regions of Europe - At any rate, the inference would seem to be unavoidable, that two diseases having the same origen and the same mode of propagation, were, essentially, one and the same -

It has struck me in investigating this subject, that it might be identical with Scrofula likewise- and upon examination the supposition seems confirmed by the following facts-

First- From the similarity of treatment - as will be shown hereafter -

Second- From its hereditary nature, to which all writers agree.

Third - From its having originated in evil habits and consequent disordered nutrition -

And Fourth - From the morbid appearances as disclosed by dissection - tho' it should be stated that, a very large number of autopsies have not been made, owing to its comparative infrequency in Europe in our days, where alone examinations of this disease have been attempted - Copeland states in his account of this disease, that the "lungs generally contained crude or softened tubercles scattered thro' them" - "tubercles were found on the vocal cords in all cases, and occasionally ulcers" - "small ulcers have also been found on the mucus coat of the

Trachea"- Peyer's glands were in all cases enlarged"- "cicatrices, and tubercles in a hard, or partially ulcerated state, were found in the intestines"- "and the mesenteric glands were enlarged and tubercular"- "that in all cases those who have died of the disease, have died from either acute or chronic inflammations of the lungs, air passages or digestive viscera- and more rarely from low fever"- That in 1200 post mortem examinations made in Norway, in all cases "the skin, cellular tissue, and walls of subcutaneous veins were indurated, yellowish and granulated"- Now, in these accounts, we find tuberculous depositions in the Abdomen and Thorax in the same situations as in Scrofula, with the addition of extensive deposits in the skin and adjacent parts- Moreover, Rees states in his Encyclopedia, that in making an examination of a person suspected of having Leprosy, in former times the Examinators always inspected his finger nails, "to see if they were not incurvated"- and this, as is well known, is one of

the characteristic symptoms of Scrofula -

From all these facts it is safe, I think, to conclude,

First - That Leprosy originated in a Disordered and Impaired Nutrition -

Second - That Leprosy is identical with Syphilis -

Third - That Leprosy is a Scrofulous disease -

And last - That the three greatest scourges of the human race, Leprosy, Syphilis and Scrofula, have all had the same origen, and are in their nature, one and the same disease -

Of its Contagious Nature.

The accounts given in the books respecting its contagious character, are various and contradictory - tho' most writers agree in this, that the matter secreted from the ulcerated surfaces, will communicate the disease, especially to those who are predisposed to it. Notwithstanding, facts are related which would seem to prove, that in certain cases, and under certain circumstances, it is not

communicated, even tho' there is daily contact with affected persons. That it is generally regarded as contagious where it prevails, is proved from the fact that, separated from the rest of mankind in communities and places of their own, they are only occasionally permitted to go abroad for mendicant purposes, and in some countries never allowed to leave their appointed habitations.

Symptoms.

The progress of this disease may properly enough be divided into three stages. and first, of the Access.

Most commonly it is slow. The blotches which characterize the first stage, appear on the face primarily, and soon after on the extremities, "scattered about in an irregular manner." They are slightly elevated above the surrounding surface, shining in appearance, of a dark or livid hue, and are perfectly insensible, any sharp pointed instrument may be thrust into them without exciting any

uneasiness whatever - and after remaining "stationary" in this way for a longer or shorter time, they are "always" succeeded by tubercles - These are the prominant characteristics of the Second Stage - They are described as varying in size, some not being larger than a pea, and others again are found as large as a good sized walnut - that they are of the same shining livid appearance as the spots, and occur on every part of the face, ears and extremities, and ultimately extending to the trunk, prevailing there, however, to a less extent than elsewhere - The skin, which during the first stage had partially become insensible, now loses its sensibility altogether - it becomes thickened and rough, deeply fissured, the rugae over the eyes being especially "large and prominant" the lips are thick and tumid, the nose and ears swolen and distorted, and "beset" with tubercles, these parts being particularly obnoxious to them - so that the whole visage becomes changed and frightfully deformed -

The hair soon falls off from all parts of the body, the scalp alone excepted - Tubercles are found in the mouth and air passages, and in all parts lined by mucous membranes - After a time, commonly many years, for this disease is exceedingly slow in its progress, the tubercles "soften and ulcerate" - "discharging an extremely foetid sanious secretion, which speedily dries up leaving a dark colored scab", and sometimes beneath these cicatrization takes place - The skin cracks and also ulcerates, forming a secretion like that discharged from the ulcerated tubercles - and very often it happens that the ulcerations about the joints of the hands and feet extend deeper and deeper, until the joints themselves are ulcerated thro - and in this manner all the fingers and toes have been destroyed and cast off - Generally, however, extending no farther in this destructive way, it spares all the other joints of the body - The voice becomes at first hoarse, and

then, from ulceration of the vocal cords, is at last entirely lost. The breath is intolerably offensive, and the whole aspect of the victim of this terrible malady, loathsome and disgusting to an extreme degree. What is remarkable, and precisely corresponding with what almost always occurs in Scrofulous diseases, at least in Phthisis is, that the Nervous System and Intestinal Canal appear to suffer no lesion at all of their several functions. At last the "muscular system becoming affected", the Leper grows "weak and deformed", and finally is carried off in the way formerly mentioned.

the Treatment.

The spots may be dissipated by discutient remidies, but the disease soon recurs in other parts of the body, or breaks out again where it formerly existed. Spontaneous cicatrization has been known to take place beneath some of the tubercles. and I have been informed by Dr White that they have even been cut out in

China, and with success- However, as a very general thing, no treatment is of any avail, unless constitutional, and none whatever of any avail in the last stages of the disease.

the Constitutional Treatment-

Galen formerly recommended a stimulant and alterative course, and for the most part this plan of treatment constitutes the only one adopted at the present day-

Dr Hancock, who resided sometime in Guiana, says that bleeding is practiced there, and is followed by an increase in the strength of the patient- and also that the Warm Bath is always used, and much trusted to by the Indians of that country. Mercury, Arsenic and Bark, have each been celebrated, particularly the two former, in various countries, and by various physicians, and in some cases are said to have been successful in curing the disease. A great variety of other deabstments and stimutants have also been used, but with no particularly good result- Copeland

states that the Iodide of Potäpsium has been successful in his hands in one case, the only one, however, in which he tried it. The indications undoubtedly are, to invigorate the constitution, and to change the unequal and unnatural mode of action in the glandular system. In the account already given, it has been identified with both Scrofula and Syphilis - and consequently, the remedies which overcome those disorders, would be most likely to prevail against this. We should therefore endevor to repair the digestive and assimulative processes, by a generous diet, accompanied with the liberal and judicious use of oily food - suitable exercise if practacable - baths, and especially shower baths, with the administration of steel and bark - and this course should not be intermitted in any stage of the disease, but steadily persevered in as a principal restorative means. The continued and judicious use of Mercury, during the first stage especially, would

undoubtedly prove benificial - Arsenic at the same time would be highly appropriate, from its well known power over cutaneous diseases - But in the latter stages of the disease, reliance should be placed on the Iodide of Potassium, given for some time, in gradually increasing doses, and carried to as great an extent, if the disease does not yield, as the constitution will bear - Its effects in Secondary and Tertiary Syphilis, given sometimes, as it has been, and for a long time, in doses of eighty or ninety grains three times a-day, have been exceedingly great - and we might reasonably hope that in Leprosy, under circumstances precisely similar, as they are found to be, it would work in an equally benificial manner - Attention to the state of the bowels, is, of course, an important item to be attended to - altho' there is not, as has

been mentioned, ordinarily either much constipation or diarhoea during the whole course of the disease - Under this mode of treatment, relief, if not a cure may confidantly be expected -

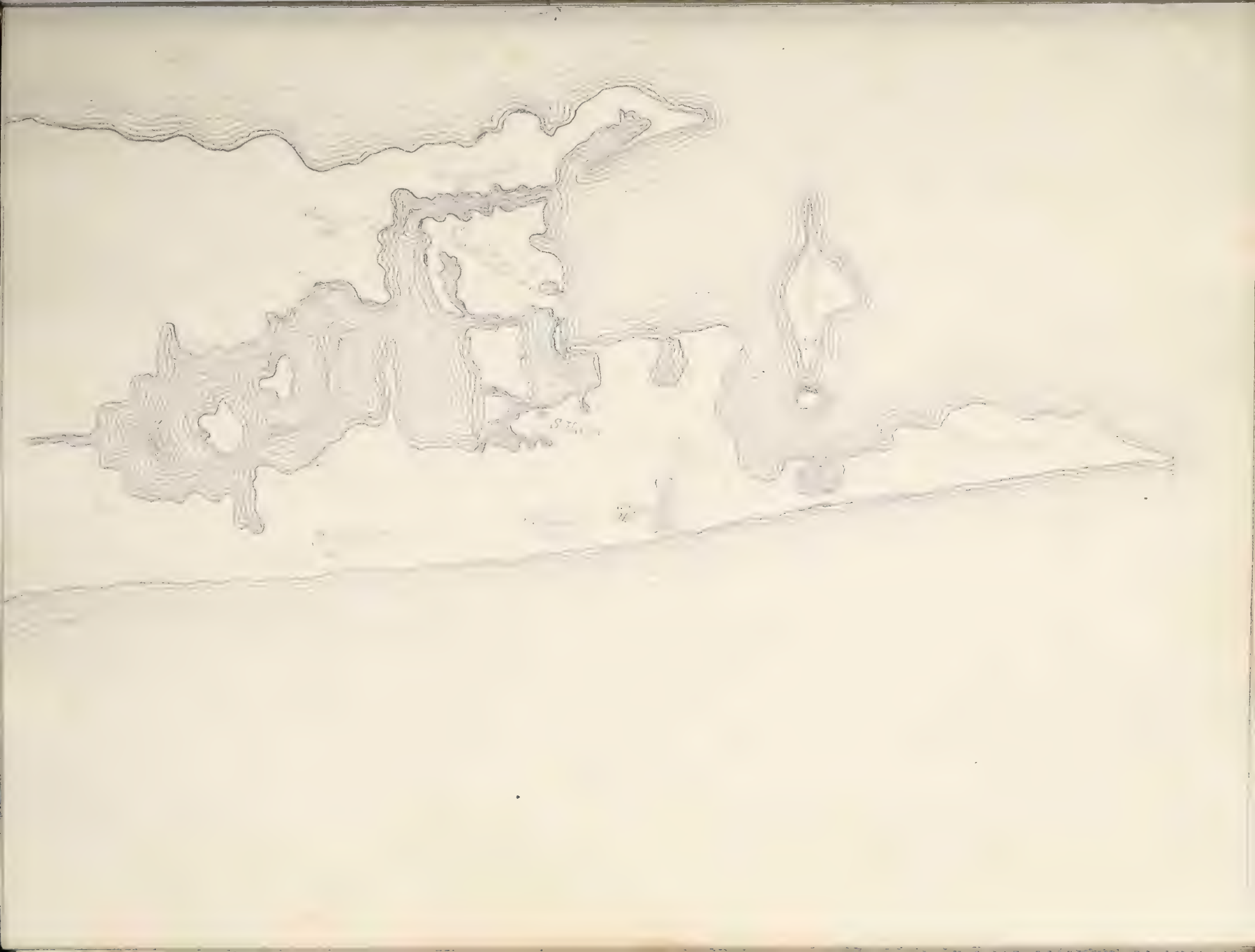
Burr R. Abbe -

January 25th 1854 -
Yale College -

II.

Dissertation
on
Solanus.

By
William Orville Ayres, B.A. 1837,
of Boston, Massachusetts.



The theme, proposed for this thesis, is Tetanus. My object is not at all to describe its ordinary symptoms and modes of treatment, but simply to present the facts, which I have been able to gather, as to the peculiarities of its developement, on the eastern part of Long Island. That the disease occurs in that region with very great relative frequency, has long been known, in some measure, to the Profession. I have endeavored to collect, from those, who have had the best opportunity to be conversant with its details, the results of their experience. Such of these results, as seem to exhibit features worthy of note, will be stated.

Let us look, in the first place, to the local history of the disease. I was informed by Dr Topping of Sagg, a physician of advanced years, that while he was quite young, his brother was attacked with what he now knows to have been Tetanus.

The medical attendants remarked upon it, as being a very strange case. The only one of the vicinity, with which they could compare it, was that of a young man who had died, several years before, of an affection which remained an anomaly to all, until Dr Gardiner of Easthampton, who had been a surgeon in the army, was called; he pronounced it Lock jaw. The death of this young man must have taken place not far from sixty five years ago, and the circumstances are sufficient to show that, at that time, Tetanus was of as rare occurrence there, as it is now in most places.

Subsequent to this it increased with alarming rapidity, and seems to have been at its full height, at the period when Dr Topping commenced practice, about forty years since. The very slightest injury was followed then by Tetanus, not it is true with absolute certainty, but in such a terrible proportion of cases, as always to excite

very great alarm, which the unhappy sequel showed, in numerous instances, to have been but too well grounded. Persons hurt, in any manner, whether with a laceration, or with a clean incision, were often removed to other places until the healing of the wound. And fortunately, as we shall have occasion to see, they needed to remove them but a short distance.

Two cases were related to me by Dr Topping, to show that a lacerated wound was not necessary for the production of traumatic Tetanus.---- A man was cutting corn-stalks, and trod on the knife which he was using for that purpose. Symptoms of Lock Jaw ensued, terminating in death.---- A little girl, playing where her brother was cutting wood, brought her hand in such a position as to receive the blow of the axe. One finger was entirely severed, another nearly so. They were adjusted, and retained in situ; union by the first

intention took place, and the patient was doing well, when Tetanus appeared, but terminated here in recovery.---- We have, in these cases, the disease caused by simple incised wounds.

And in this connection I may state, that the same result has much more recently occurred, in the practice of Dr Wright of Bridgehampton. The injury here was from a sharp instrument (I think a scythe), in the calf of the leg.---- Still again, in the practice of Dr Cook of Sag Harbor, it has followed an amputation of the thigh, though perhaps in this instance the patient might have escaped, had he not suffered exposure to cold through culpable negligence on the part of his friends. Undoubtedly similar cases might be found in numbers, though these are the only ones within my knowledge at present, on the facts of which I can rely.

The disease continued, in such frequency as has been intimated, for a period of

perhaps twenty years, and since that time, according to the opinion of Dr Topping, has been rather steadily decreasing. In his own language "There is not one case now, where then there were twenty." Still the number is, at the present time, very great. How many may be estimated to occur within the town of Southampton annually, I have no means of deciding; no records are kept. I suppose that Dr Topping has seen from eighty to a hundred, within the period of his practice, though this does not at all represent the number which have occurred, within a few miles of his residence. Other physicians have probably treated an equal proportionate number, according to their years of service.

It is a fact of singular significance, that regions closely connected in situation, differ very widely in regard to their liability to Tetanus. A glance at the map will show the relative positions of Sag Harbor, Bridgehampton, Sagg, Easthampton, and Montauk. The three former may be considered as the centre of

the district most exposed to the disease; in the two latter it is so exceedingly rare, that the inhabitants say "Nobody ever has the lockjaw there". So closely is the line drawn, that a most marked contrast exists between the east and the west sides of Georgica Pond, distant less than half a mile from each other. And practical advantage is taken of this fact, by the farmers of the west side, who carry the young animals which they emasculate, to the east side of the pond, or to Montauk, until the wound is healed.

If now it is asked "What difference is there in the localities, which may cause such different results?" we have no answer to give. Between the east and the west sides of Georgica, there is as little dissimilarity, as between any two adjacent fields; and the same is true of all the region of Bridgehampton, Sagg, and Easthampton. When we come to Montauk, we find indeed a difference, but it is on the wrong side. Its high and rolling hills, entirely destitute of any shelter, present such perfect exposure

to the cold and storms, and to the constant fog-damps from the sea, that according to the common theories of Tetanus, no place could well be better situated to induce the disease, and yet it is exempt.

Passing this, we reach another point, of great interest, that is, whether in a district where Tetanus prevails to so great an extent, we shall not find it displaying features, in some degree different from those commonly attributed to it. In illustrating this part of the subject, it may be advisable first to state briefly the diagnostic symptoms of Traumatic Tetanus and Traumatic Hysteria, as laid down by Dr Knight. In Tetanus we have the affection commencing commonly not sooner than the ~~fourth~~ eighth day after the wound, in the muscles of the throat, from which it extends to those of mastication, and through the system, allowing of only short jerking motions in the spasms, and having the mind free; while Hysteria commences earlier, perhaps from the very moment of the wound, commonly begins

in the muscles nearest the part injured, allows greater extent of motion during the paroxysms, and often affects the mind; Hysteria being a much less grave disease than Tetanus.

In regard to these symptoms, I have made many inquiries. The replies have been far from uniform, and the conclusion which seems necessarily to result from them is, that in the region of which we treat, the disease is exceedingly irregular in its developements, and that the distinctions between Tetanus and Hysteria are scarcely to be traced. The first symptoms are stated to occur in very various parts of the body, and with little apparent reference to the point injured; in the back, in the arm, in the calf of the leg; and in one instance of a gunshot wound of the arm, the first warning of Tetanus was pain in the tendo Achillis. In quite a number of cases, the muscles of mastication have not been affected at all, so that the familiar name Lock-jaw would not be applicable, and yet the patient died. Dr Stilwell of Sag Harbor related to me a case

in which the muscles of the spine were perfectly rigid, and the spasms strongly marked, but the jaws free. This patient recovered.

An instance occurred, in the practice of Dr Gardiner of Bridghampton, in which the neck was somewhat stiff, and the muscles of deglutition affected, scarcely a spasm having taken place, when without warning or struggle the patient was found dead. The question is ---- what killed him?

In many cases, part only of the symptoms of Tetanus are present, as a rigidity of the spinal muscles, a few slight spasms &c, which after a number of days disappear; as though the causes of Tetanus were existing, but were from the state of the system, or some other reason, unable fully to develope their effects.

As to the freedom of motion allowed to the arms, the testimony is also discrepant. Dr Topping told me that he had never seen an instance in which, even during the worst paroxysms, the arms were not tossed about in the

wildest and most extended motions, to such a degree in fact, that care was necessary on the part of the attendants, to prevent injury from the violent blows. Here was the free action of Hysteria, and yet he had never known a case earlier than the fifth day after injury, and had never found the mind affected by the disease ---- two symptoms which belong rather to Tetanus. Other practitioners, however, spoke of having observed the short jerking motions of the arms, in some instances but not in all. In fact Dr Stilwell remarked to me "but two or three, of all the cases I have seen, were of the same type.

The facts, which I have thus presented, exhibit certainly many points of disagreement. Is it not reasonable to infer that they show the existence of a strong Tetanic influence, so strong as to manifest its effects, on excitement, in almost any part of the body, and without much reference to the forms common in other regions, terminating life also occasionally with as little reference to them.

And in this connection I wish to mention

another singular affection of the nervous system, pertaining to this locality. That it has any relation to Tetanus, or will tend in the slightest degree to account for the local peculiarities of the latter disease, I do not at all claim. Still its strange development has arrested my attention, and may be deemed worthy of notice. I speak of it the more readily, inasmuch as I can find nothing like it on record, though I have learned that a state of things, almost precisely similar, exists in Greenwich in this state.

The disease is called Chorea, with how much propriety may be judged from the ensuing statement. It was brought to Easthampton, perhaps a hundred and fifty years since, by a foreigner, I believe an Englishman. He married there, and as his children grew up, they manifested symptoms of the malady with which their father was afflicted. Their descendants have intermarried, among themselves extensively, and with other families, and the disease is transmitted. It is not true that all the children of a family suffer from it, but if there

are a number of them, some are pretty sure to show marks of it sooner or later; and if it passes one generation it breaks out in the next. The families thus afflicted are well known in Easthampton, and an objection is very naturally felt to marriage into them.

The disease commences its manifestations at a variable period, sometimes perhaps in childhood (though I believe seldom so early), more commonly not till adult life. It is very slight at first, and very gradual in its advances. The hands begin to be a little unsteady, jerking perhaps with a small twitch now and then, and the features are occasionally distorted for a moment. From this beginning, the progress is extremely slow but perfectly certain, till the unfortunate sufferer, after the lapse of quite a number of years, seems to have no control whatever, over the action of the muscles; they move apparently at their own bidding, not at his. The arms and head are snatched about in the most grotesque manner possible, and

the gait is such as can perhaps be imagined.

This distressing state of things, according to all experience, terminates only at death. Medication appears to have no effect upon it, and in fact so firmly has this belief became fixed in the minds of those liable to this disease, that at the present time I think very few attempts are made toward effecting a cure; it is considered hopeless.

One very interesting inquiry, bearing on this affection, would be ---- Do those afflicted with the malady, on removing to other regions, experience any change in their symptoms; and are their children any less liable to its recurrence? Concerning this I have endeavored to obtain information, but thus far without success.

It should be remarked also that in Easthampton, and all that part of the Island, they have, as in other places, cases of Chorea of the common type, which yield to the ordinary modes of treatment, and present indeed nothing peculiar.

I have here stated in brief the characters of an affection of the nerves, which seems to me to be shrouded in mystery as deeply as Tetanus; and this common bond of union, together with their local co-developement, and their physiological relation, must be my excuse for introducing the notice here.

The form of Tetanus, of which we have hitherto been treating, is the traumatic. As might well be expected, the idiopathic type is also of very frequent occurrence. I have learned nothing worthy of note, as to its causes or features, further than what might be very readily inferred from what has been already stated. It is a much less intractable affection. Indeed one physician told me that he never lost a case of it; and he had treated many of them; this however is an assertion stronger than the experience of others will sustain.

One or two incidental points may perhaps be stated here with propriety.

All to whom I have applied, agree in

one point --- that they have never seen a clear case of Tetanus in an adult female. But it is not by any means thus proved that sex affords a protection; men are, from their occupations, much more liable to the exciting causes.

A case was reported to me by Dr Cook, in which Tetanus followed an injury, at the end of seven weeks. I mention it merely on account of the length of the interval. The question arises --- may not the disease here have been idiopathic?

Dr Topping stated, that on the occurrence of nausea during Tetanus, the spasm of the masticatory muscles was relaxed to allow emesis, returning at its cessation. He told me also, that during recovery, the legs often remain rigid, without much pain, for weeks after the disappearance of the spasms. Still again, he mentioned that during the years when the prevalence of the disease was greatest, they never dared to allow a wound to heal by the first intention, Tetanus was so sure to follow; when suppuration was established, they considered the danger past.

Thus far we have been speaking of the disease, only as it occurs in man. All the domestic animals, however, as is well known, are liable to it, horses probably more frequently than any others. They are attacked with it in both forms, traumatic and idiopathic. Its occurrence after emasculation, and the removal of the young animals to avoid its invasion, have been already mentioned. As to the idiopathic type, I will but state a remark made by Dr Dopping --- that no farmer in his neighborhood dare leave a horse in the pasture, during a night of white frost; Tetanus is almost certain to ensue.

My object, however, in referring to the disease, as existing among the inferior animals, is to specify the result at which the observations of Dr Dopping have led him to arrive, as to the mode of their death, in such cases. He says that in almost all instances they die, simply from inanition; if food can be supplied for a sufficient length of time, it may be for a number of weeks, they recover.

As an illustration --- a young man of that vicinity found his horse, after violent driving of the preceding evening, attacked with Tetanus. Determined that the animal should not die, if that could be prevented, he supported him with slings in such a manner as to keep him erect, and proceeded to give him nutriment in a liquid form. This was continued until, as the neighbors said "it cost as much as the horse was worth" but the experiment was successful; the animal recovered.

Another instance --- a little pig was found rigid with Tetanus, to such a degree that if he fell he was unable to rise, yet when placed on his four inflexible legs he contrived to move about, though in an awkward fashion. He manifested signs of hunger very plainly, making efforts to suck with the others, but could not separate his jaws to a sufficient extent to do it. His owner fed him with milk, which he could draw up without moving his jaws, for the space of several weeks. The

rigidity gradually passed away, and the pig lived to acquire a full and healthy growth.

It may be that this opinion, of death only from inanition, has not a suitable basis. I give it merely as having been advanced by one, who has probably seen more of Tetanus than any one else in this country. It cannot, of course, apply to the disease, as seen in the human race. Patients are not allowed to die from want of food, and they certainly die from other causes, though the precise mode of death is in some cases exceedingly obscure.

Reviewing now the facts which have come under our notice, we may perhaps safely assume, that four points have been established, with some degree of certainty.

1. That the great frequency of Tetanus, in the locality specified, is a matter of comparatively modern introduction.
2. That the relative number of cases is at present diminishing.
3. That localities, closely connected in situation, differ remarkably in their relations to the disease, without any apparent assignable cause.

4. That characters are manifested, somewhat different from those which Malaria presents in other regions.

We come next to the practical points of greatest interest--- Have we thus done anything to remove the obscurity which has always surrounded this strange affection? and--- Are we better prepared to treat it with any hope of success? To both these questions, it is feared, the answer must be in the negative. Those physicians who have seen it in its greatest numbers, are still as much in the dark as they were with their first case, as to both the pathology and the remedies. Perhaps every mode of treatment, which has ever been advised, has been put in practice by them, and yet all have assured me that they are unacquainted with anything on which they rely with confidence. Almost all speak of having seen recoveries (that they should be called <u>cures</u> they do not claim) under some or other of the common means, and yet the same course of medication, in cases apparently more favorable, has proved entirely unavailing.

Neither are any of them able to assign any cause for the great frequency of Tetanus, in that limited Space at the east end of the Island. In default of any other, one or two have mentioned (though without themselves attaching importance to it) the use of the White Fish or Bunkers — Alosa menhaden — on the land as manure. Such a suggestion, however, requires no remark, and we must be content to leave the matter still in obscurity.

I have thus presented the facts, as I have succeeded in gathering them, concerning certain local peculiarities of Tetanus, and my task is accomplished. Any theories which can be formed from these facts, I leave to those whose wisdome and experience may entitle their theories to confidence.

It is said that the towns of Saybrook, Westbrook, and Killingworth, and their vicinity, in this State, exhibit a tendency to the production of Tetanus, similar

in some degree to that of which we have been treating. In regard to this I have endeavored to obtain accurate information, that I might compare the results in the two districts; I have not, however, succeeded to any extent worthy of notice.

III.

Dissertation
on
Retained Placenta.

By
Erastus Bradley Bills,
Of New Haven.

Retained Placenta

In most cases of labour at full time the placenta is expelled in from ten to twenty minutes after the birth of the child occasionally however circumstances arise which test the knowledge and tax the ingenuity of the Obstetrician retained placenta is sometimes the source of considerable trouble to the Physician and danger to the patient

The placenta may be retained in the cavity of the Uterus by three causes viz

1st Atony of the Uterus

2nd By irregular or spasmodic contractions of the uterine fibres

3d By morbid adhesions having taken place between the placenta and uterus or between the uterus and the membranes of the foetus

Causes

Retention from Atony occurs generally

in those cases in which there is a want of sufficient energy on the part of the uterus to disengage the placenta entirely from its attachment: where there has been a deficiency of power during the expulsion of the child quite an interval having elapsed between the birth of the head and the passage of the shoulders; also in cases of instrumental labours, in which the powers of life are much exhausted; and when the foetal body has been forcibly and improperly extracted from the uterine cavity. that organ being left in a relayed and flabby condition unable from the interference to continue its active contractile force for the expulsion of the placental mass.

The second condition usually occurs where the birth has been rapid – or where there has been rough pulling at the funis.

The contractions are of various kinds sometimes the uterus contracts globularly on the placenta all the fibres shorten themselves simultaneously – at others the organ presents the figure

of a cone the circular fibres acting more strongly than the longitudinal — or sections of the organ may contracts around the principle bulk of the placenta. At other times the central fibres of the body of the uterus acting strongly produce the hourglass state the placenta being prevented from descending by the constricted ring.

The third and last condition is not very common although there are some who are particularly subject to placental adhesion. It is also the result of falls blows &c which induce inflamation which may be of a higher or lower degree of intensity. The adhesion may be entire or partial it is not common to find it entirely in this condition; this union is sometimes of considerable firmness — Adhesion occasionally takes place between the membranes of the foetus and the uterus, owing to the dissimilarity of the two textures it must be uncommon it is undoubtedly produced by the same causes which produce this result between the uterus and placenta.

Symptoms

The first condition may be infered by the following symptoms; if after the birth of the child there be no afterpains – if on passing the hand over the abdomen we find the uterus large soft and flabby – when on taking hold of the cord we find the vessels are not full but flaccid provided there be a ligature on the cut extremity for if the organ contracts upon the placenta it will force the blood from the mass down into the funis and produce a turgid and distended condition of the arteries and vein. Again, if any portion of the placenta is detached there will be hemorrhage to a greater or less extent depending on the amount of separation which has taken place because that organ being uncontracted the vessels remain large and their mouths are not plugged in the least degree consequently flooding must necessarialy take place.

The second class, retention from irregular contractions is marked by the following symptoms

After the birth of the child the uterus acts strongly and the pains follow each other in quick succession while the placenta does not decend within reach of the finger; the funis becomes turgid with blood giving it a twisting writhing motion— If to the hand externally applied the uterine tumor feels large and hard, also if the contractions seems to be permanant immediately after delivery——

The symptoms of the Third condition are not uniform yet we may suspect that the third cause is in operation when after the birth of the child the placenta does not decend although the uterus continues to act moderately for a time also if on pulling the funis on the stretch and then letting it suddenly go it springs up with a short jerk—

It has been said that there are no symptoms which positively inform us which of the three causes are in operation this is undoubtedly sometimes true, yet in the

majority of cases by close attention to the symptoms which are present we may know what it is not and thus give our diagnosis one more element of truth

Prognosis

Under appropiate treatment favourable —

Treatment

The indications in a case of the first kind are obvious, viz, to induce uterine action and the expulsion of the placental mass for if there be copious hemorrhage there is no safety short of this

The means to be employed to meet these indications are friction pressure the application of cold and the introduction of the hand into the cavity of the uterus for the double purpose of bringing away the mass and inducing contractions by the irritation caused by its introduction.

After the birth of the child the best authorities advise waiting from ten to twenty min-

utes if there be no hemorrhage without any interference on the part of the accoucheur

After the lapse of such a period if there be no action on the friction may be made over the region of the uterus— or the integuments may be grasped by the hand alternately applied and pinched— the patient may be directed to blow forcibly on the back of her hand thus bringing into action the abdominal muscles

If these means do not have the desired effect the hand may be immersed in cold water and brought suddenly in contact with the parietes of the abdomen by the shock thus given to the system rousing the dormant powers to action— or cloths dipped in cold water and vinegar may be laid on the lower part of the abdomen and vulva—

Dr Gooch recommended the injection of cold water into the uterus. Hoffman, Mayer, and Tironi advise injecting the umbilical vein with dilute Brandy Vinegar or cold water Smellie, Baudelocque and Denman employed

but one ligature to the funis assigning as a reason "that if the blood be allowed to escape through the open vessels it would facilitate the expulsion of the mass by diminishing its bulk" Dr Ramsbotham denies this conclusion and says that "the placenta is equally well thrown off whether its vessels are allowed to bleed or not". Purgative clysters thrown into the rectum have been advised, enema of cold water have been productive of the best results, the ergot has also been administered with success

Often some of the above means will produce the desired result but if hemorrhage becomes dangerous the attendant should not hesitate to resort to manual extraction, which many practitioners of the present day deem the best practise

The removal of the placenta from the uterine cavity retained from atony is in itself said to be one of the easiest operations in surgery although the circumstances requiring it are of a highly perilous character and the

danger will be proportionate to the relaxation of that organ; the danger is not that that the attendant may lacerate or injure the parts or induce inflamation but that the organ may be left in a relaxed or uncontracted state after its withdrawal subjecting the patient to a continuance of the hemorrhage gratuitously however the stimulus of the hand generally causes the uterus to act and expell the hand and placenta together

If manual extraction is resolved upon the attendant should bear in mind that previous to the introduction of the hand it is impossible to tell the exact situation in which the mass may be found. It may be entirely thrown off, or partly adherent and partly detached or it may be morbidly adherent to a greater or less extent; Hence the operator should be calmn and collected ready for any emergency

The rules to be observed in the operation are the following.

The patient should be placed on

the left side lying conveniently near the edge of the bed with the limbs in a state of semiflexion, the coat should be taken off (as in all cases where it becomes necessary to introduce the hand) the sleeve tucked up and the hand anointed with some mild unctuous substance.

Dr Ramsbotham directs the left hand while others advise the right for my part I should prefer the right but this is immaterial that hand which is most convenient should be employed either right or left sitting, or kneeling by the bed side bring the fingers of the hand to be introduced into the form of a cone take the funis umbilicus in the other twisting it once or twice round the fingers making gentle traction, the external labia are to be gently separated and the hand gradually introduced following the course of the cord until it has gained possession of the cavity of the uterus. the other hand should then be placed on the abdomen to give support to the uterine tumour as that organ being smaller than it was before the birth

of the child the abdominal parietes do not support it consequently it will roll about in the abdominal cavity impeding our efforts to extract the mass The hand within the cavity should be passed between the placental and uterine surface passing it all over the maternal surface of the placenta to assure ourselves that there is no portion of it left behind at the same time if action does not come on we grasp the uterine tumor externally and in all probability from the irritation thus applied uterine action will be induced which will expel both the hand and the placenta

If contractions should not take place it would be highly dangerous to withdraw the hand on the contrary the hand should remain in the cavity for a space until we endeavor to induce action by passing the fingers over the internal parieties of the organ so as to irritate in some degree

After the removal of the mass we must not forget to inspect it carefully for the purpose of

ascertaining whether any portion of it remains behind
on laying it on a napkin with its internal
face upwards to observe if it be broken or entire
if a portion of it be missed it is probable that
the missing portion remains in the cavity of
the uterus having convinced that a part is
wanting we should introduce the hand immediately the second time before the uterus has
contracted to such a degree as to render it difficult without doing material injury to the
parts for it is better says Dr Ramsbotham to
remove the disrupted portion than leave it to
be thrown off by nature if however there be only
a few shreds remaining it would not be advisable to put the patient to the inconvenience and
risk of doing injury to the parts and ourselves
to the multiplication of not accomplishing our
object.

The indications for the relief of
the second condition are the opposite of the
first viz to induce relaxation; to produce
this result external applications seem of little

avail and of internal remedies it has been remarked that "Opium is perhaps the only one which can procure the relaxation sought" yet there are objections to its use its influence may be greater than is compatible with the safety of the patient the uterine powers may be paralyzed and fatal hemorrhage ensue however it may be given in small doses but its effects should be closely watched

Venesection has been resorted to in order to overcome the spasm at the present time it is not considered admissable unless convulsions should supervene.

Sometimes after waiting an hour or an hour and a half the spasm will relax and the secundines will be expelled naturally

The rule laid down by Dr Ramsbotham is to wait an hour and a half and then remove it by manual operation

In this condition there is less danger from flooding than when adhesion is the cause of delay but the operation is more difficult

on account of the resistance to be overcome

The operation may be preformed in the same manner as before described instead of finding the parts in a relaxed state they will be in the opposite condition hence the attendant should proceed with caution passing the hand along with a gentle boring motion, until it has gained possession of the cavity the placenta is then grasped and the whole may gradually be withdrawn.

In the third and last condition of which I shall speak, medicines are of little avail; as soon as we are certain that morbid adhesions is the cause of delay the same should be introduced the same as before the fingers are gently insinuated with a boring kind of motion between it and the uterine surface keeping the palm toward the placenta, in this may we continue the separation until the whole is disengaged; however the adhesion may be so firm to be overcome, in this case if this is the case we may succeed by picking portions

off seperately with the fingers taking care to remove all that we possibly can without doing injury to the parts; An eminent writer in speaking on this subject remarks that he "is persuaded that very few states after accidents are fraught with such extreme peril as that in which any portion of the placenta remains adherent to the uterine surface"

The hand should not be withdrawn until the entire seperation is effected, and we should be particular to remove every particle of the mass for if any remains it may become the nucleus for hydatid formations

If from loss of blood or any other cause the patient is lying in a state of syncope it would be improper to excite the uterus until the vital energies of the system are roused to action by the exhibition of some of the diffusible stimuli.

When adhesion exists between the membranes and the uterus the removal is not generally very difficult the case is to

be treated on the same principles as before laid down

Cases occasionally occur in which the symptoms of the different conditions of which I have treated are so mixed and blended together that without an internal examination it is impossible to say definitely what is the cause of delay fortunately for us in the majority of cases the indications will be too plain to lead to error on the part of the judicious Accoucheur.

IV.

Dissertation on Fractures.

By

John Kinney Downes,
of New Haven.

Fracture of a bone is defined as a solution of its continuity; and is usually divided into Simple Compound, or Comminuted these admitting of a subdivision into Oblique Transverse and Longitudinal.

Simple fracture exists when there is one or more bones broken in one place only without giving material injury to the adjoining soft parts.

Compound fracture is known by its having a wounds of the integuments leading to the fractured surfaces of the bone,

Comminuted fracture is said to exist when a bone is broken in two or more places, and it may be either simple or Compound.

The oblique form occurs in all the above varieties, the direction of the fracture forms an acute angle with the axis of the bone, this form is the one most frequently met with in practice and from its direction it gives freedom to shortening by the overlapping of the fractured extremities

The transverse form as indicated by its name has its direction across the bone forming a right angle with the axis of the bone, the fracture

extremities may or may not be removed from their natural position, or there may be a bending or deviation of the bone as muscular action directs.

The longitudinal fracture is rarely met with except in fractures of the condyles. But this is a complication of comminuted fractures.

Fractures are often attended with other injuries as dislocation of the fractured bone, rupture of joints and blood vessels, nerves and tendons, or by penetrating into cavities as the thorax from fractured ribs or the brain from fractured skull.

The predisposing causes of fracture are disease affecting the texture of the bones such as rickets and the strumous, syphilitic or the cancerous or hepatic but most commonly the disease termed fragilitas ossium in which the earthy constituents are deficient.

The exciting causes are direct or indirect violence and undue muscular action. Direct violence when the force is applied immediately over the seat of injury, indirect when the violence is applied at a distance from the fracture and from muscular action when the olecranon or patella are fractured from the sudden contraction of the muscles.

that are inserted into these bones.

As a general rule it is not very difficult to form a diagnosis of fracture particularly in spare subjects the symptoms are usually obvious to the eye and hand of the Surgeon, there will be more or less deformity, preternatural mobility, crepitus is felt or heard on rubbing the fractured surfaces together, pain heat and swelling of the adjacent soft parts, also excessive pain on motion or when the muscles acting on the part are called into action.

In prognosis much will depend upon the constitution, age and habits of the patient, as all of these circumstances tends to vary the disposition to union and speedy recovery: in infancy the bones are not fully developed there is a greater proportion of animal matter and union in such cases takes place rapidly, so in youth the bones not being fully ossified union takes place more readily than in manhood and in manhood more surely than in advanced age. Those whose constitution is impaired by vicissitudes or depressing agents of any kind are less liable to a speedy and perfect reunion, so also, some bones are less prone to take on ossific or bony reunion than others, for instance the Patella, Olecranon and neck of the Femur internal to the Capsule

rarely unite by bone. either from the difficulty of keeping the bones in apposition or from the supposed reason that they are situated within joints which secrete a fluid peculiar to the part, and this fluid mingles with the fluid which is poured out from the fractured surfaces, preventing the natural changes requisite for bony union, it is also supposed by some that the want of bony union in such cases is owing to a deficient supply of nutrient bloods to the parts. The cause, variety, form and complications will also have much to to do in forming a prognosis. so also, the time which elapses from the period of fracture to its reduction will have a tendency to render more or less laidy the process of repair.

Reparation commences by the effusion of blood from the ruptured vessels of the surrounding muscles peri=osteum, bone and medullary tissue, - inflammation of the soft parts is immediately established which in a few days is lessened by the process of absorption, this removes some of the constituents of the blood, leaving the liquor sanguineous, by which the soft parts become agglutinated together - thus - forming a capsule external to the bone - from the internal surface of this capsule a fluid is poured out termed by some, the same fluid, being also effused from the medullary cavity, then

exists and surrounds the fractured extremities. This fluid coagulating becomes organised by the formation and extension of vessels in its substance, it then gradually acquires a fibrinous texture and from the manner in which it is formed a plug is formed in the medullary cavity which joins the fractured extremities together, and a ferrule surrounds the fractured ends forming what is usually called the provisionary or primitive callus. The inflammatory action affecting the bone at a later period a gelatinous fluid is effused from its edges which becomes organised and continues to grow until that which is effused from its proximal edge meets with that of the distal edge, then coalesce and becoming cartilaginous form the proper callus. This cartilage being composed of cellular tissue gradually becomes condensed and after a longer or shorter period of time, osseous matter is deposited within its cells and firm union is the result.

Absorption removes the provisionary callus leaving the bone of its natural size and shape.

To bring about the desired reunion of bone, reduction should be effected without delay, by gentle and steady extension and counter extension and manipulation by the hands of the surgeon bringing the fractured extremities in direct and close apposition

them retaining them in that position by the proper dressings which consists of Bandages to prevent swelling and inflammation, Compresses to fill up irregularities in the surface and take off pressure from neighbouring joints, Splints to retain the fractured extremities in their proper place, prevent motion at the point of fracture and give solidity and firmness to the injured part, Extension and Counter extension to prevent shortning or overlapping of the bone.

For serving these various motives many kinds of instruments and machinery have been invented, all of which have their own reputation, but as regards the use of these in the treatment of fracture there can be no fixed rule in individual cases. The only rule is to make the position of the patient and the fracture conform and harmonize together so that there may be no restraint on the fracture that will excite muscular activity or irritability and that the patient may be so placed that he can attend to natures wants with as little disturbance of the fracture as possible. To do this the ingenuity of the Surgeon must be exercised in adapting such dressings as the case will admit of to the advantage of the patient. Simple & suitable dressings are to be preferred rather than those which require an engineer to adjust and attend them.

In compound fracture the wound should be closed so as to exclude all communication with the atmosphere, detached spicules of bone and other foreign bodies should be carefully removed, the bandage splints &c are to be so applied that the wound can be examined as often as necessary without removing all the dressings. In comminuted and compound comminuted fractures the surgeon must be guided by circumstances, such injuries are always of a bad character and require prompt & deliberate attention, particularly if the injury is of the extremities where the question of amputation may arise the rule is to save the parts if possible without hazarding the life of the patient. otherwise it is best to make an immediate removal of the parts.

There is always a degree of febrile & inflammatory symptoms present according to the extent of injury, these should be combatted by the antiphlogistic regimen by anodynes to allay pain & irritability. If there is an exhausting discharge or the patient of a delicate constitution the system must be supported by tonics stimulants and good living. - When a fracture opens into a joint care must be taken to prevent inflammation & the joint be so fixed that it will tend to be most useful to the patient in case anchylosis is the result. If accompanied with dislocation the dislocation should be reduced prior to the treatment of fracture.

In all cases instruction should be given that the dressings are not to be disturbed without the advice or consent of the surgeon and the surgeon should see that the dressings were not removed too soon, or that the injured parts were not used until firm and perfect union had taken place.

New Haven January 26 1854.

John Kenney Downes

V.

Dissertation
on
Continued Fever.

By
Josiah Griffin Ely,
of Tyre.

Continued Fever

In selecting Continued fever for my subject I have been somewhat influenced by my own peculiar views and if in my presentation of it to your notice I should be unfortunate in my arrangement and by giving you an incongruous mass without form to consider, should compel you to deem me incompetent for the task I have undertaken. I can but say that none can regret such an incompetency more than myself nor none more sensibly feel it.

I do not expect to advance anything new concerning Continued fever, but knowing that every practitioner should adopt views, and correct views too, of a disease so prevalent as this I present those which I have adopted with the hope

that if in your wisdom, which is the result of experience, you should deem them incorrect you will point out my error and thereby enable me to obtain the right and practical understanding of the matter

This subject is necessarily one of the greatest interest to the Medical practitioner, for it is the consideration of a disease which makes up a large proportion of his practice, and consequently it is of vital importance that his views of the nature of this disease be correct

We are almost constantly hearing, in the profession and out of it, different species of fever spoken of. The public will tell us of typhus, typhoid, bilious putrid, low, nervous and brain fevers. And systematic writers are not behind in enumerating quite as many distinct species.

Now if it be true that fever does appear under all the various forms which have been spoken of, and many more even, it seems to me that the effect of all this division and subdivision on the mind is most certainly injurious to the practitioner and prejudicial to the best interests and safety of the patient.

There is too much prescribing for a disease according to its name, and where we find those who adopt and abide by all the subdivisions of Continued fever, we shall be apt to find those who practice a routine mode of treatment, and such, as I have been taught and as common sense would tell me, are not the most successful in their treatment of disease.

We can rely on none of the distinctions that have been made in Continued fever, for even the most dissimilar forms will run insensibly into each other, and may often be traced to the same contagion.

It will be my object in the first place to endeavor to describe Continued fever in its most simple and ordinary form; and after that to speak of its principal variations.

This fever does not always begin in the same manner, and we should never expect to find the same train of morbid symptoms, occurring in every case, in the same order and number as we find them laid down in the books, for if we did expect, and depended on them, it would make us continually liable to error in our diagnosis.

The premonitory symptoms of Continued fever, when they occur, may be thus described

For several days before the disease takes on its distinct and proper form the patient is aware of the presence of morbid sensations usually disenabling him from pursuing his usual occupations, and these symptoms are usually attributed, and apparently result from a deranged condition of the nervous

system - We notice a great alteration in the expression of the patients countenance He is pale, abstracted and languid - extremely reluctant to make any mental or bodily exertion - he will be fickle, easily tired, listless, and frequently apprehensive of some impending evil. The appetite is lost; the tongue will be found white and tumulous; the bowels are very irregular; at sometimes costive, and at other times affected with diarrhoea - There will be much uneasiness and wandering pains in different parts of the body; the senses will not possess their natural delicacy; sometimes there is giddiness; the patient will be drowsy during the day and will be troubled with broken and unpleasing sleep at night.

It is not in all cases that the premonitory symptoms thus occur, but my impression is, that in the majority of cases a premonition of what we are to expect is given.

It is not always that we have an opportunity to observe these symptoms of impending disease, for their period may be brief, or they may not occur in the manner and form laid down, but in the majority of cases enough of them will be present to define the nature and character of the disease we are called to treat.

The regular onset of the fever is almost invariably marked by a shivering fit, or chill. Some headache is also a common attendant at this time, and the pain is usually referred to the forehead. some say this headache is usually first felt by the patient on getting up in the morning, but it certainly cannot be uniformly so, for it may occur at any hour of the day.

There is a sense of fulness, heaviness and vertigo more common, or more uniform than the headache, and is denoted by his walk for he will stagger a little, like a man

made unsteady by strong drink.

Sometimes the onset of this disease is marked by the presence of diarrhea, and when this does occur it should be considered an important circumstance. It may be attended with severe pain in the abdomen, or it may only cause some degree of uneasiness there.

When there have been no premonitory circumstances of which we have been aware, symptoms will frequently show themselves, even at this stage of the disease, which evidently belong to the nervous system and denote some degree of disturbance and alteration in the functions of sensation, of thought and of voluntary motion.

"Febrile oppression" comprises these disturbances. The strength of the patient is very much prostrated, and although he may try to struggle against this, at the end of a few days, and sometimes even of a few hours he has to give up the unequal struggle and

take to his bed.

The symptoms which mark the outset of continued fever have now been given, and in order to describe its course the more clearly and easily I shall pursue the plan of those who have written on it systematically and divide it, as others do, into weekly periods. It does not follow from such a division that I allot a period of one week to any set of symptoms, or, rather to a set of particular symptoms; but from what I am able to gather from the writers on this disease, I find, that in the most regular forms of continued fever we shall have a succession of different sets of symptoms which are said to occupy each about that space of time, and they are uniform enough to be a great help in the description of this disease.

The symptoms which occur during the first stage, period or week, mostly belong to the sanguiferous system.

There is frequency of pulse, increased heat

of the skin, and considerable thirst; there is headache, and throbbing of the temples.

On applying the hand to the surface of the patient's body during this period the skin will be found hot and dry, and it feels very hot and pungent - the degree of heat however as indicated by the thermometer, is not as great as we should conclude, judging from the sensation imparted to the hand.

The thirst is not usually very troublesome after the first few days. The tongue will be dry and clammy in some cases and in others clean and smooth; - more often it will be furred, its edges and tip will be of a bright red color while the middle of the tongue will be occupied by a white fur which is divided by a straight brown streak at times.

During this stage of the disease we may often find evidence or indications of diseased action by a careful examination of the abdominal region, although we may not

be successful in this till the second stage begins

When diarrhea does occur during the first stage, we shall usually find the stools loose and frequent - sometimes of a dark color and sometimes pale small, or of a yellow ochre appearance -

The abdomen will be found hard and resisting when pressure is made upon it, and somewhat tympanitic as is proved by percussion -

Frequently pressure over the cecal region will cause uneasiness to be manifested there, and a little gurgling movement will become palpable to the hand as the pressure is made.

In this stage also we frequently notice some affection of the air passages, for we can see that there is quickness of respiration, and the stethoscope will develope morbid sounds in the cavity of the thorax

The symptoms before spoken of as belonging to the nervous system remain perceptible

we find the prostrate oppression of mental apathy and indifference - we must speak to him briskly to obtain a response - his sensibilities are blunted, but his answers, when we can get them, are usually rational and to the point -

There is the prostration of muscular power as shown by the patient's position on his back - sometimes this prostration is so great that when the bowels are relieved the stools will be passed under him while in bed without his being able to prevent it, or at least, without his making any apparent endeavor to prevent it -

The urine, during this stage, will be found to be scanty, high colored, and often ill smelling.

There is an eruption peculiar to this fever which sometimes shows itself, or begins to appear, at the close of this stage; but it most commonly postponed till the second week, or stage of the fever.

The changes that occur during the second week of continued fever, are usually the following: The pulse has become more frequent, weaker and consequently more compressible. The tongue grows drier and browner. Sordes accumulate on the teeth and lips; and about this time delirium is most apt to appear, and the symptoms previously spoken of are more frequently observed.

The headache of the previous stage has usually by this time passed away. The prostration of muscular power is now very great, and the voluntary movements are sometimes executed irregularly.

The patient will be found to assume a position indicative of his weakness, for we find him lying on his back and slipping towards the foot of the bed. He is unable to make the necessary degree of muscular effort to place and retain himself in any other position

The patients voice will be feeble so much so that we can hardly distinguish what he says—

There is frequently an inability to swallow, either from the great prostration, or because the dry and parched state of the throat renders it difficult and painful to do so.

In bad cases, there will often be convulsive twitching of the tendons and other irregular and involuntary movements of the tendons and muscles.

The trimulous tongue will now be present and we frequently find in the patient an utter inability to thrust the tongue from the mouth.

The delirium and eruption have been mentioned as characteristic of the second stage. This delirium is peculiar. It is present at first in the night only and most commonly appears on his awaking from a disturbed sleep. He will be very anxious to get up and

some restraint will be necessary to keep him in bed. His delirium is not always, or most frequently of this kind, but usually without much agitation. He will lie still muttering disjointed sentences and words. From this state he may usually be roused for a time by loud speaking, or by the presence and sight of a strange face, and the medical attendant may find on his entrance an apparently sane man, while but a moment previous he was incoherent and delirious. This return of consciousness is but for a brief time, for he presently relapses.

During this stage there will be a great loss of sensation and a great insensibility to impressions. Deafness is frequently a prominent symptom and we as frequently hear it spoken of as a favorable sign; but in itself it certainly is not so. It is not so dangerous as would be a state of the patient where the sense of hearing was morbidly

acute, and consequently is only a favorable sign by comparison, as indicating a less dangerous state than its opposite.

When imperfection or loss of vision occurs we consider it a much more dangerous sign than deafness. The eye is generally dull and corresponds with the expression of the countenance. Sometimes as the disease progresses there will appear before the patient's eyes black spots, like flies, *muscæ volitantes*, in consequence, it is thought, of partial insensibility of the retina.

The patient now appears to be careless about the termination of his disease; he thinks himself well and if you ask him how he is, will be likely to tell you so.

In bad cases the urine and feces pass away involuntarily; the urine continually dribbling away in some instances, when the bladder is much distended.

The peculiar eruption of this fever must now be described. It will be found to

consist of small rosy blotches, of a roundish or crescentic shape; slightly, if at all raised above the surface of the skin on which they appear. They do not vanish under pressure, as is somewhere stated, but will become fainter as the pressure is applied.

In different cases their number will vary exceedingly; in some instances being very few and in others so numerous as to almost cover the whole surface of abdomen and thorax. They are thinner and less common on the arms and legs; sometimes found on the back when we look for them there. They vary much in the intensity of their color, and consequently in their distinctness. This eruption does not all come out at once and its duration is therefore not the same. Its duration is from two days to a fortnight.

Another kind of eruption is described by some authors as occurring in this disease without being peculiar to it. The vesicles that

compose this eruption are called Sudamina.
They are described as small hemispherical
elevations of the cuticle containing a trans-
parent watery fluid. If they are not viewed
in a proper position they readily elude the ob-
servation, but may be readily felt when the
hand is passed over them.

Diarrhea is another of the marked Symp-
toms that we sometimes observe in cases
of continued fever during the second stage.
The character of the evacuations will be
found to remain the same, and we may
almost say it is distinctive of this disease.

If pressure be made over the abdo-
men we shall often find that he winces and
that his countenance betokens suffering
even though he make no complaint.

Hemorrhage from the bowels is
apt to occur in this stage of the fever.
It sometimes occurs in considerable quan-
tities and rapidly exhausts the patient, or
recurs at intervals prostrating the same

result- quite as certainly.

Hemorrhage from the bowels occurs sometimes in connection with other putrid symptoms, such as petechia, purple spots, and ultimate depression of the vital powers.

In this case this symptom is of the worst- omen. Thus effusions depend on a morbid condition of the blood, and if we abstract- any at this time we shall find almost- uncoagulable, appearing more like a sediment- than a clot-.

When these putrid symptoms are strongly marked, the patients body will exhale a peculiar fetor; the tongue will be black, dry and fissured; the teeth are still covered by dark sordes; the flesh sloughs from the bones in consequence of the mere pressure of the bed clothes; in some extreme cases the toes and feet have mortified and I believe some instances have been given where both legs have rotted away to the bones, and even then the patient recovered.

death may, and sometimes does, take place in this, the second period of continued fever.

The phenomena that occur during the third stage of continued fever must necessarily vary according as the disease is about to terminate, in death or recovery. That there is a tendency there to terminate in this stage, no one of practical knowledge on this point will, I think, dispute.

When we are to have a favorable termination of the disease, the more formidable of the symptoms will diminish in severity and gradually abate. A great improvement in the appearance of the patient, in his manner of attending to, and his replies to the questions that are put to him. That stupor and listlessness so manifest in the second stage clears away; the temperature of the skin is less hot and pungent; the tongue is moist and clearer at the

edges and the pulse becomes less frequent:
The evacuations from the bowels are diminished in frequency, increased in consistency and evidently more healthy; and when the time for evacuating them arrives the patient gives notice of that necessity, or asks for some assistance.
It is at this time when the patient assumes a more natural expression of countenance that his emaciation becomes apparent. The favorable crisis may be preceded by an aggravation of all the former symptoms, or of most of them, and a noticeable increase of the general distress.
Certain evacuations, which I shall call critical, are sometimes observed to accompany the favorable change, and perhaps the most constant of them is that of sweating. Then is an increased action of the secreting and excreting organs and the functions of the system strive to take

on their natural and normal action.

But if the disease be about to terminate in death, these favorable tokens will not appear but with an aggravation of his symptoms he grows weaker and weaker till death finally closes the scene and his drama of life is over.

Thus has continued fever, in its ordinary form, been taken at its commencement and followed through its course as it terminated in recovery or death and its several symptoms of its several stages noticed as far as my limits would allow.

The varieties of continued fever are now to be spoken of, and as much space has been occupied in giving the description of its ordinary form the varieties need only a passing notice.

Even though a specific disease assume various forms and the dissimilarity in some respect is sufficiently great as to lead some to think these forms are

different maladies. These variations not only occur in individual cases, but even in whole epidemics. In an epidemic the inflammatory type will predominate, marked by the great excitement of the circulating system; in another great depression of the nervous system, the characteristics of the typhoid type, will prevail over and obscure the other symptoms. Sometimes we may meet with the pure Synocha of Cullen and at other times his genuine typhus, but the most usual variety of Continued fever is represented by the Synochus of Cullen, which is an admixture of the other two forms. In the beginning we have the inflammatory symptoms, and at the end, those of a typhoid type or character.

In the inflammatory form of this fever the antiphlogistic regimen is well borne, while in the opposite form it is sometimes

absolutly necessary to support the patients strength from the very first by the administration of brothe, wine and brandy. When an epidemic of this character occurs we can always find some cases which bear manifest indications of the inflammatory type, and again we find some that are a combination of the two, thus showing that though circumstances may have a direct influence in determining the character of the fever yet no distinction that we can make can be depended on, and we cannot call, with a due regard to propriety, these different forms as distinct species, but merely as varieties of the same fever brought about by the modifying circumstances. The character of disease is very much changed at times, as we all know, sometimes there being a predominance of the inflammatory symptoms, and again the typhoid symptoms will be the most

prominent.

Morbid appearances as shown by post mortem examination

Dr. Chittenbach claimed that inflammation of the brain constituted the essence of Continued fever. If this theory be true, dissection would of course confirm it. But does it do this?

The examination of a large number of the bodies of those who had died with this fever for the very purpose of ascertaining the morbid condition of the brain, was made by Chaud. an able and accurate French writer. and in about one half of the cases no morbid condition whatever of the brain was found. and in the other half there were not morbid changes enough to account for the disease even had these changes been present in all. Again. these changes when they do occur have no relation to the duration of the disease.

The comatose condition of the patient was

by some thought- to be fairly accounted for. if the essence of this fever was really inflammation of the brain. But- if this theory be true, how is it that- we have such striking and marked benefit- arising from the administration of strong stimulants as wine, brandy &c? Now in almost innumerable cases this beneficial result- does actually occur from the administration of these strong and powerful stimulants; while if it were really true that inflammation, as Clutterbuck claims, is the essence of Continued fever, they could not fail of doing great- harm - I think we must look further than this before we can satisfactorily account- for all the symptoms of continued fever; for in some of the malignant- forms of this disease where death occurs in a very few days + we should, if this theory be true, look for a frightful disorganization of the brain, no morbid appearance whatever of it- is found

but it appears perfectly healthy.
Of the incorrectness of Dr. Cruikshank's theory I am fully convinced.

Of the morbid appearances in the abdomen.

The intestinal canal is furnished on its inner surface with glands or follicles. Some of these glands are scattered over the whole mucous surface. Standing separate, they are called Solitary glands. There are groups of glands, called Peyers glands. These glands are met with in the ileum alone. The lower end of the ileum in some instances is almost entirely covered by them. They are said not to go beyond the ileo-cæcal valve.

The main alterations met with in the abdomen after death in Continued fever will be alterations of these same glands, of the Solitary glands and of the glands of Peyer.

The glands will become enlarged, and they will be more perceptible than in their natural state.

In their natural state they present a grayish translucent surface dotted over with black spots; which black points are supposed to mark the central ducts or mouths of the sebaceous follicles.

Now in the progress of the form these patches become reddish; the follicles elevate and slough away - not wholly perhaps, but partially, leaving a ragged ulcer with thickened edges.

Sometimes these glands disappear without this change - there will be but little of the redness and thickening of the edges - the adjacent mucous membrane, and the rest of the patch of follicles will be pale and hard.

Sometimes there may be a kind of fungous swelling which destroys all trace of follicular structure.

There is a variation in color as well as in the form and structure of these glands. Sometimes they are pale and grey - sometimes

red; sometimes they will be of a yellow col-
or as if they had been tinged by that ochrey
fluid which is discharged from the bowels
during life.

The Solitary glands will be-
come large and hard and form a whi-
tish colored projection from the surface.
After a while there will be ulceration
in them also. and the ulcer will
usually be small, but sometimes a
deep one. We find these changes
more common and more advanced
as we approach the cecum.
There ought to be more ulcers there
for there we find the most glands.
In connection with this ulceration
of the Solitary glands and those of
Peyer we frequently have some in-
flammation of the mesenteric glands,
as denoted by their redness, hardness
and swelling. The inflammation
of the mesenteric gland is said to be secondary.

Thus alterations of the intestinal glands which have been very imperfectly described certainly afford a plausible explanation of many of the symptoms of this disease.

Is not this disorganisation going on there sufficient to account for the hemorrhage we occasionally have from the bowels during this form of fever; for the pain felt there by the patient and for the utmost uneasiness usually felt when pressure is made over the cæcum; for the diarrhœa, so frequent a symptom in continued fever?

We know that inflammation of the mucous tissues produces but little pain and while this tissue alone is involved in the ulceration we need not wonder that we hear but few complaints from the patient; but when the muscular and peritoneal coats become involved in this inflammatory process pain

will be felt -

These alterations are so common in Continued fever, that many pathologists consider this fever as essentially an inflammation of these intestinal glands, and nothing else -

But if this were the correct doctrine, then, by the number, depth and extent of the ulcerations we could correctly judge of the intensity of the symptoms and the severity of the case - But we cannot do so. The extent of the ulceration bears no relation to the severity of the fever: for in some cases where the symptoms have been of the very worst kind, scarcely any ulcerations have been found; while in some cases where there has been, as we say a moderate course of fever that has at length terminated in death, we frequently have great disorganization in the ileum.

This inflammatory condition of the

mucous glands is not always present in continued fever - Consequently - Continued fever cannot be essentially inflammation of these glands. for if it were. this inflammation should be uniformly present -.

After death from Continued fever we frequently find engorgement in the pulmonary substance - this may be mechanical in a great measure, and probably is - It is not unusual to find large portions of the lungs in a hepatised state, and even infiltrated at times with pus. the bronchial tubes may be clogged up with viscid mucus -

The Spleen is frequently found altered in texture, being enlarged, of a dark color, and of a soft, and at times of an almost rotten consistence -

This finishes what I have to say of the morbid appearances found on dissection after death by Continued fever -.

I consider Contagion from to originate in a specific animal poison and to be communicable from one who is suffering under the disease to another who is not.

I think there are strong reasons for believing this, for in my humble opinion the burden of proof confirms it.

If it is produced by contagion, then the contagionists ought to be able to advance some pretty strong proof of their position, and I am glad to state that they are able to do so.

When large masses of people are suddenly and simultaneously affected by any malady we presume it is not contagious, or, if contagious, that it has some other source than contagion.

But when we see disease beginning from a certain spot, a circumscribed position, and gradually spreading as from a centre, as one after another is exposed to its influence, the presumption is

form of its propagation from person to person is very strong.

We find that those persons who have had close and continued intercourse with the sick are more liable to have the fever than those in similar circumstances escaping that they have no known communication with the patient. I say the former will frequently contract the fever while the latter remains entirely free from it. Are not these facts convincing evidence that this fever does spread by contagion? If not contagious why do the nurses in the fever wards of our Hospitals who are obliged to be much with the sick so frequently contract the disease? or why do those who merely wash the linen and bed clothes of the patient so often take continued fever, if it be not contagious?

Persons sick with Continued fever are sometimes transported to a distant

town where there is a perfect freedom from this disease - But from this patient the disease spreads as from a centre, and we may soon have it abounding with all its evils - It is well known that continued fever is propagated from house to house & from town to town in this way.

Ships in the navy containing a number of persons, entirely free from all and every form of fever, have, on the introduction of a single person labouring under continued fever, been converted into a mere hospital, the disease spreading from one to another till nearly all were affected - This looks to me like the result of contagion.
I might go on to produce facts in support of the contagiousness of Continued fever, but I have already brought forward enough for my purpose.

It is but fair to notice some of the arguments brought forward by the non-contagionists - They will tell you it is

not- contagious because all do not take it who have intercourse with the sick.
They say it- does not- spread in the houses of the wealthy.
They say this disease frequently occurs when we can trace no contagion.
Small pox may do that- and yet- they would hardly say it- was not- contagious.
All do not- contract- Small pox who are exposed to it- contagion, while they are in an unprotected state.

It- certainly is of great- importance to determine whether continued fever is propagated by contagion; whether it is ever so propagated- for by our belief in this matter the lives of many may be saved or lost-. If it- is not- certain but- only doubtful, we ought- to place ourselves on the safe side and act- as if we considered it- contagious. We cannot lose much by so doing-.

The treatment of Continued fever has been various - and various perhaps from the difference in the character of different Epidemics of this fever, or perhaps different from the different theories in vogue - A plan of treatment that is suited to an Epidemic may be highly improper in the next or in another. And this fact in my mind is a strong objection to the plan of prescribing for a disease according to its name - I do not believe in it - I see a case of Continued fever, and without any investigation of the symptoms we prescribe according to the plan pursued by some person years ago - Continued fever in its character, is not always the same, and the same treatment in every case is not proper - The rules laid down to us by our worthy professor of Theory and Practice come in play here - first, be sure that we do the patient good: secondly, that at any rate we do him no harm -

The great object in our treatment of this disease is to obviate the tendency to death. Morbid processes are apt to be set up during the continuance of this disease, which is not checked will inflict irreparable injury on important organs. It must be our duty to guard against this. And when once the disease has fairly set in to conduct it to a favorable close, for it is truly said we can guide a fever but cannot cure it.

Cold affusion, Emetics and Blood letting have each and all been advocated as possessing a great power in breaking up the disease.

The Cold affusion I consider as in the great majority of cases as much more liable to do hurt than good, and consequently should never employ it unless I thought it strongly indicated.

Emetics, when their administration is indicated by the obvious gastric disturbance,

will sometimes be followed by a considerable abatement of many of the morbid symptoms.

Infirm sponging of the surface of the patients body is highly spoken of by many, and when the symptoms appear to indicate it, deserves to be tried, as long as it is grateful to the feelings of the patient.

The propriety of blood letting must be determined by the indications presented. We should never bleed merely because our patient has fever, but if those signs which in all cases call for the abstraction of blood be present it follows as a matter of course that we should use this means unhesitatingly. And when we do bleed we should never take any more blood than is absolutely necessary to accomplish our object. Therefore we should always bleed in these cases in the upright position.

Purgatives. The intestines should be well cleared by an active purgative at the

outset of the disease; and after that mild laxatives may be given to cause a daily action of the bowels - if they do not - thus act without them - If the typhoid type be strongly marked and the indications of intestinal ulceration be present, purgatives should not be pressed.

Mercury should be given in continued fever when the typhoid variety of this fever is not present, but if it be, I think I should withhold it.

Cold applied to the head is often beneficial in relieving some of the symptoms of this disease. It should be applied to the shaven scalp and continued as long as it is grateful to the feelings of the patient.

If the typhoid symptoms predominate we should commence early to support our patients strength by a liberal allowance of beef tea; and if nervous symptoms appear we may add ammonia, Hoffman's

Ether, and wine and brandy if required -
Opium is a powerful remedy in this disease
when properly managed - When the pa-
tient is affected with delirium, restless-
ness, wakefulness and Spasm; in short -
when the disturbance of the nervous system
outruns that of the sanguiferous system
- then Opium is very beneficial -

It is sometimes almost impossible
to procure sleep for the patient - The
nervous system is so unstrung that he
cannot obtain it -, and we are told that
those who pass three days and nights
in succession without sleep usually die -
Opium is called for here - Give a full
dose in the evening and we shall gener-
ally find a wonderful improvement the
next day - When we are in doubt of
the propriety of its administration, the best
plan will be to give small doses at
intervals and watch the results -

When there is much disorder in the

Thorax - dyspnea, with sounds denoting inflammation of the bronchial membrane, or of the pulmonary substance, leeches, or cupping glasses may be applied to the chest to relieve the trouble; or, in milder cases a blister, or a mustard cataplasm will answer the purpose as effectually -

The remedies that have been recommended in Ophthalmia from an - Cold applied to the shaven scalp; - Abstraction of blood when there exists evidence of local inflammation; An active cathartic at first; followed by mild laxatives if the bowels are confined or sluggish; if there should be much diarrhea astringents as of course called for: as Dover's powder or wine of Opium: when the nervous symptoms are prominent - we give Opium in efficient doses - in some cases we give small and repeated doses of one or of the preparations of mercury; and

in some cases, as I have said, early support- by animal broth, wine, and brandy, is demanded —

These remedies are to be adapted to the circumstances of our patients, and if properly administered will usually effect- their object — I cannot close without one word of the vis medicatrix naturæ — It- is the strong arm of the practitioner and he who best knows how to wield it will be found the most successful in his practice.

We should exercise incessant vigilance, and be ready to adopt the proper remedy at the proper moment —

We must endeavor to mitigate those symptoms that we cannot wholly subdue; to relieve as far as may be those complications which accompany, but are not essential to the disease; and finally to aid the vis medicatrix naturæ in its conservative efforts —

VI.

Dissertation
on
Intermittent Fever.

By

Cornelio Nelson Howard,
Of Abbot, Maine.

Intermittent fever -

In presenting this subject, I make no further attempt than to give in abstract what I have been able to gather from the various authors, and without preliminary remarks. This disease, which is known in popular language as Ague, is marked by a certain train of symptoms, which grouped together constitute a "paroxysm," or "ague fit." Each "fit" is divided into three stages, and each stage is characterized by a series of peculiar phenomena. After passing through these various stages, the system returns to nearly or quite its original healthy condition, and the disease is said to "intermit."

Without proceeding further with the history of the disease, I will, at once, attempt to describe a "paroxysm of ague."

I have said, there are three stages.

There is however always preceding the first, or cold stage, a certain condition of the system, which is sometimes described as a distinct stage, but more commonly a forming, or accession stage, it being the same as the general accession in all febrile diseases. There is the general feeling of weariness, indisposition, loss of appetite, of power to make exertion, shivering & yawning — Wandering pains about the loins, back & extremities, a sensation of distress & debility in the epigastrium, with sometimes slight nausea and vomiting.

The skin is dry, tongue furred, secretions scanty; the mind is also torpid. —

If the patient sleeps, his state resembles coma, occasionally there is delirium, tho' this is rare. —

after this state of things continues for a longer or shorter period of time there is ushered in —

The Cold Stage. — This stage commences with very different severity in different cases. There is felt at first a sensation of chilliness commencing about the shoulders, gradually creeping along the course of the spine, and extremities & finally over the entire system, accompanied with the constant disposition to yawn & change place. — With the increasing sensation of cold, the skin becomes pale, contracted and rough, the features collapsed, the lips shrunken, owing to the withdrawal of the blood from the capillaries. The bulbs of the hair being so contracted than the surrounding skin, stand out in little prominences, like the skin of a plucked goose, hence the term "cutis anserina" — and with the appearance presented by the bristling up of the hair, "Horripilatio." The whole body is contracted —

The face, lips, ears and nails turn blue.
The patient feels a decided sensation of cold, much out of proportion to the actual temperature of the surface of the body. In severe cases the sensations of cold extend to the bones and internal parts of the body.—
At this time there is trembling of the muscles, commencing, usually, about the jaws & extending over the body, and so severe at times, that the patient appears as he were in a convulsion—producing very great prostration—
Indeed these violent rigors, in debilitated persons, not unfrequently produce a complete state of coma; especially, if the debility is accompanied with general plethora.
The mind of the patient becomes restless, he is incapable of fixing his attention upon a particular subject, and often manifests unusual—

irritability of mind, ill temper and even maniacal, there may be slight delirium. The pulse becomes small frequent & firm; thirst urgent; mouth and fauces dry & clammy; urine pale and scanty, bowels constipated, tongue dry and covered with a white coat.

There is pain in the head, tightness and weight in the chest with difficulty of breathing; sometimes a short, dry cough. And near the termination of this stage, violent vomiting of a bilious ropy matter.

In mild cases all of the above symptoms may be very slight.

The duration of this stage varies from a few minutes to four or five hours, & is followed immediately by the second, or "Hot Stage." This is ushered in gradually by the subsidence of the "Chills" and alternation with flushes of heat about the head and neck, changing the com-

tenance from its shrunken, to a full, flush-ed appearance. The body and limbs re-sume their usual full smooth condi-tion — Instead, however, of stopping here, the heat goes on increasing in extent and severity until the skin surface becomes intensely hot & dry.
The pain in the head continues, but is of a different kind from that in the cold stage. the temples throb violent-ly — not unfrequently delirium —
Pain in the back and extremeties more severe. There is great acuteness of the sensorial powers —
The pulse changes, becoming full, strong and frequent, intense thirst and dry-ness of mouth and fauces — the breath-ing is still oppressed, though deeper and less hurried than in the former stage, tongue still furred, urine, still scanty, but now of a high color —
Some authors speak of having witnessed

convulsions, coma, and even apoplexy, in this stage.
The hot stage, usually continues longer than the cold, its symptoms loosing themselves in those of the following:
"The Sweating Stage" — The skin here becomes soft; there breaks out upon the face, neck & breast, a slight moisture, which increases to a copious sweat and spreads over the whole body, producing by the secretion, a relief of all the symptoms. The pulse looses its fullness, hardness & frequency, heat of skin subsides, breathing becomes free & easy, thirst, pain of head & extremities, with the delirium, if there has been any, subside. The tongue becomes moist & clean — The urine is plenteous, tho' still high colored and deposites a turbid, lateritious, or pale red sediment.
Soon the sweating subsides, and the patient is nearly as well as ever. —

This is the ordinary course of a paroxysm of intermittent fever—

During the intermission the patient is ordinarily able to attend to his accustomed avocations without experiencing any evil effects from the disease. Sometimes, however, though there be no febrile symptoms, the patient is left in a state of impaired health; he experiences languor, indisposition to make bodily or mental exertion, is easily fatigued, is without appetite, is peculiarly sensitive to variable climate, especially to cold—. This condition depends, however, much upon the previous health and constitution of the patient; and hence the progress of the disease will be governed somewhat by these circumstances—

After a time, if the disease be left entirely the paroxysm will return and run its course precisely as before—

The intermission is the period which elapses between the conclusion of one paroxysm and the beginning of the next. When the period between the commencement of one fit and the commencement of the next is termed an "interval." As the different stages vary in length, and as a consequence the length of the paroxysm is variable, so the intermissions may be unequal, and at the same time, fill the interval to the same length. The interval is regular in each case of intermittents, but they differ very much in different cases. From intermits arises the necessity of dividing agues into different species, designated by peculiar types. — When the paroxysm comes on every day, and at a regular hour in each day, it is termed the "quotidian type". When it occurs on every other day, and is absent on the alternate days, it is the "tertian type." — Again when it occurs every third day, it is the "quartan type"

These are the principle types, there are, however, others, as quintans, sextans &c, but these are of no importance—

The principle types have other peculiar features, for instance, it is a general rule that in the quotidian, the paroxysm comes on in the morning; in the tertian, about the middle of the day, and in the quartan, in the evening—

When there is a variation from this rule, if the fit appears later in the day than it did on the preceding, it is termed a "postponing ague," if on the other hand, it occurs earlier than on the day before, it is an "anticipating ague"—

When the paroxysm postpones, we have an indication that the disease is about to yield.—By continual postponing, a quotidian may become a tertian, a tertian, may run into a quartan, &c. while in anticipating agues the order is reversed—

Another peculiarity of these types is that the duration of their paroxysms differs in inverse proportion to the length of the interval, also inversely to the cold stage. In the quotidian, in which the interval is shortest the paroxysm is longest, and the cold stage shortest; while in the quartan, the interval of which is longest, the paroxysm is short, and cold stage long. In quotidian, the duration of the paroxysm is from ten to twelve hours; in tertian six to eight, and in quartan not more than four to six hours.

Tertians, and quartans have certain modifications; We have "double tertians" in which there is a paroxysm every day, the paroxysm of one day differing therefrom that of the next, but resembling very nearly that of the third, while the second simulates that of the fourth, and so on alternately, another form of the tertians is where two fits occur on

the same day, and are distinct in character from each other, one comes on in the morning, the other in the evening; on the second day there will be none,—

We have also double quartans, the paroxysms appearing on the first and second days, and not on the third; as there may be two fits on the first day, none on the second & third, two on the fourth, There is still another modification of the quartan, the triple, wherein there is a paroxysm every day, that on the first day differing in character from that of the second and third, but simulating that on the fourth.

The second will resemble the fifth, the third, the sixth, &c,

There may also be triple quartans, having three fits the first day none on the second & third, three on the fourth &c,

There are said to be also double & triple quotidians, These are rarely seen—

The duration of this disease is very variable. the number of paroxysms. time in they may continue for months and sometimes for years, owing to the fact that the cause of the disease is usually removed speedily, also that medication is generally employed early. the natural tendency of the disease is at present very obscure.

Agues are not confined to any one season of the year. though they are most frequent in spring and autumn, the latter commonly most severe.

Cotidians are most apt to occur in the spring. tertians in autumn.

All persons, and at all periods of life appears to be susceptible to intermittent, though in middle age most abundantly and more often in males than in females. This difference arises. doubtless in part from the fact that males are more exposed to the exciting causes,

The prognosis of this disease depends very much upon the constitution of the patient, climate and various other circumstances. In cold climates it is almost never fatal, especially if the patient be young and of good constitution — old people, however, also in those whose health has been much impaired by disease, and more especially by some forms of visceral disease. There is danger, at least, that the termination may be unfavorable. In warm climates, the disease is likely, not unfrequently, to run on speedily to a fatal termination. The system is not usually as vigorous in that as in temperate climate, which, no doubt, has its influence in the prognosis of this disease.

When there are decided indications of derangement of the digestive organs; a debilitated or irritable condition of the stomach and intestinal canal. the violent internal congestion in the

Cold stage tends to bring on cerebral depression. Hence when the system is already debilitated, the patient is very likely to sink into a state of fatal lethargy or apoplexy.

When there is delirium, indicating a severe form of the disease; when the respiration is difficult and suppressed; when there is tumefaction of the abdomen, & protracted, and colliquative diarrhea, or discharges of bloody urine, in such cases we may look for an unfavorable termination;

If, during the intermission, the patient remains debilitated and depressed, the prognosis is unfavorable.

Causes: The predisposing causes of intermittent are debility in all its forms, and hence all diseases which have a tendency to produce a low state of the system, and particularly the previous occurrence of the disease itself.

The exciting cause is now immediately believed to be the exposure of the person to the emanation of certain effluvia from the surface of the earth, to which is given the term "miasm", or miasmata, there being, as claimed by some writers upon the subject, but one sort of effluvia, while others contend that under different circumstances there may be different varieties; this however is a matter of mere speculative theory, which is of no account in practice—

This effluvia is found to exist in the immediate vicinity of low marshy regions, and its production is believed to depend upon three circumstances, viz. heat, moisture, and the decomposition of vegetable matter.—

The first, presence of heat, is proved by the fact that miasm is very seldom found in a climate the temperature of which is below sixty degrees Fahrenheit,

In the high latitudes, therefore, we find no traces of this poisonous effluvia, but, as we approach the equator, it begins to make its appearance, till in the low latitudes we find it most abundant. And here the diseases thence arising, assume their severest forms. Intermittents, are likely to become remittent and subsequently proper continued fever;

The second condition, presence of moisture, appears evident: inasmuch as, miasm appears in regions characterized by humidity of soil, never occurring where the land is properly drained at all seasons of the year.

When marshy lands which have long been productive of miasmatic diseases, are drained, and brought under a state of cultivation, those diseases immediately disappear.

It is not necessary that moisture exist in very great abundance; for grounds which are overflown with water, although all other circumstances be favorable, will not emit the effluvia. Indeed, when there is ordinarily a great emanation of the poison; after the fall of copious rains, no poison is formed. The rains appear to wash down to the earth, these effluvia, and destroy their effects, hence the miasmatic diseases subside; But when the ground again gets partially dried the disease reappears with increased vigor. We see then that heat and moisture are essential to miasmatic productions, still more these, is required. On ship board, away from shore, of course, there is abundance of moisture, but however high may be the temperature, there is rarely miasmatic disease of any form.

There must be earth, and with it vegetable growth and decay—with decomposition.—

The character of the soil, has an influence. That which retains the moisture longest. Such as clayey soil, is most productive of the poisons, also a mixture of fresh and salt marsh. Intermittents appear in spring and autumn, more than at other seasons of the year. In spring the earth is returning from the condition attendant on the rainy season. In autumn, there is the accumulated mass of vegetable decomposition which has been forming during the summer. Though but little is known of the nature of miasm, yet some of its properties are exhibited. Its specific gravity is greater than that of air—it therefore falls to the surface of the earth. Hence the propriety of choosing

high elevations per residence in miasmatic neighborhoods. Even persons sleeping in upper stories of houses, are not so liable to contract the disease as those on ground floors.
At night there is a greater accumulation than during the day, and thus greater effect is produced upon persons exposed. By night than by day. The effluvia may be moved by the wind and carried to parts remote from the origin unless arrested in its course by some intervening barrier, as a forest - a chain of hills, or even a high wall, when it will sometimes collect in large quantities and produce the same effects as in its original locality.

Treatment. In the cold stage but little is to be done. The patient should be kept as warm as may be, by additional clothing, by warm applications.

to the body, a hot-body to the feet, the warm bath, as even the hot air bath.— As the thirst is usually urgent, tepid drinks may be given quite freely. If the patient become exhausted, mild stimulating drinks are demanded.— Opium given in the onset, in one or two grain doses, or the tinct, from thirty to forty drops, is said have a happy effect upon the circulation. It also quiets the patient, and aids in the restoration of warmth to the body. Emetics may be given if there be indications of offending matter in the stomach, such as coated tongue foul breath, offensive taste in the mouth. A moderate dose of ipecacuanha, is better than the acrid emetics, on account of the great tendency to irritation of the stomach.— General bleeding is recommended by some, to relieve the

internal vascular congestion — but except in full plethoric, strong patients, the practice is but little recommended at the present day.

In the hot stage, depletion is also advised occasionally, Opium — cold acidulated drinks, cooling applications. If the febrile symptoms are very marked, with excessive hot dry skin, some of the refrigerent diaphoretics, the preparations of nitre may be administered, the effervescing mixture, in very severe cases, antimony.

In order to prevent the recurrence of the paroxysm, remedial measures should be resorted in the intermission, and the physician's chief reliance in the cure of the disease, is upon this mode of treatment. Cathartics & emetics are used if there be special indications which demand their use.

The principle remedy, and one which,

has come to be considered a specific, is the cinchona either the substance given in 2z doses, or what is much better the quinine in two or three grain doses once in four or six hours. throughout the whole of the intermission. The solution of the quinine in water by the addition of a few drops of sulphuric or nitric acid, is the best form of administering it. — Instead of giving the quinine in small repeated doses, it is often administered in larger doses a few hours before the expected paroxysm, should make its appearance. Various other remedies are in use. — Arsenic in moderate doses is considered a good remedy, Great caution should be used in its administration — These, as I have said, are the most important remedies, and with these I cose my theme —

H. N. Howard.

VIII.

Dissertation

on

The cause, duration and termination of disease.

By

John Nicoll

of New Haven.

The Course, Duration,
And
Terminations of Disease.

By the course of disease I mean the succession of symptoms in a disease, in regard both to order, and rapidity. The diseases in their progress pass through four stages, viz. the invasion, increase, acme, and decline, but as the succession is generally so gradual, it is difficult to mark the line of demarcation. Some diseases have more than one acme, as Variola. It is in acute diseases alone, that we should expect to see these stages well marked. Of these four periods mentioned, the invasion is the best defined. The access of most of the acute diseases is characterized by a chill, followed by fever. The stomach is often irritable, and we have nausea, and vomiting, the secretions are more or less di-

ordered, the circulation is disturbed, the tongue coated, and the skin generally hot, and dry. These symptoms gradually, or rapidly, increase, until the disease arrives at its height. It may here remain stationary for a short time, or pass on to the third stage. In young children we are very apt to have disease ushered in with convulsions, and by syncope in females. The access of some diseases is marked by peculiar symptoms; for instance in Typhoid fever we have epistaxis, also pain in the back and loins preceding some of the eruptive fevers. The stage of decline, is marked by the diminution, or disappearance first of the general symptoms, and then of the local disturbance, if any be present. These stages of course will be modified according to the nature of the disease, the constitution of the patient, and the various causes ever around us.

When a disease runs its

course with little, or no abatement, or with a gradual increase in the severity of its symptoms, until it has reached its height, it is said to be continued. In some diseases after a period of excitement, the symptoms are partially abated for a short time, again returning to their former severity. This alternation may continue to the end. To this form of disease, the term remittent, has been applied. Where the symptoms are entirely abated for a certain period of time, leaving the patient apparently well, and again return at stated intervals, the disease is termed intermittent. The period of excitement is called the paroxysm, and the period of relaxation, the intermission. I shall not attempt to explain the cause of these peculiar phenomena, but they are probably owing in part, to the tendency which exists in the system to repose after excitement, and in part to the effect of the exciting cause.

Diseases differ greatly in

their duration, some are very rapid in their course, and terminate speedily, these are denominated acute, while those which are more slow and uncertain in their progress are termed chronic. There is also another division which is of great importance to a physician. There is one class of diseases which seem to have a regular, limited, and definite course, that no treatment can arrest, or shorten, another class seem to be limited by the ordinary processes of Nature, and would in a majority of cases without treatment, be removed by the vis medicatrix Naturae. A third class are those in which there is no tendency to self limitation, and over which Nature seems to have no control. Unless the physician is aware of these facts he may attend much harm in his efforts to relieve his patient, while in many cases the patient by watching Nature in her efforts, and assisting her by gentle means in the right direction, he may relieve much suffering, and add

greatly to the comfort of his patient.

There are many causes which tend to modify the duration of disease, as age sex, temperament, and improper treatment but these causes are so numerous, and so obvious, that I will not attempt to speak of them individually.

Strictly speaking there can be but two ultimate terminations to disease, recovery or death, but most diseases before reaching these points, pass through certain stages, or gradations, which relatively to the original disease, may be spoken of as terminations. I shall consider the subject in this light.

A disease may terminate in convalescence, a chronic form of the same disorder, it may leave the whole system in a deranged state, or it may end in death. Strictly speaking convalescence is the stage of recovery, but it is generally considered as that state in which recovery is perfectly

manifest, and the patient only needs to regain his strength, to place him in the same condition of health that he enjoyed before the attack. Complete recovery may be said to have taken place when the system has returned to its original condition, when all functional and organic disorder, the result of the disease has entirely ceased. As already intimated these changes are brought about in various ways. The recovery may be sudden, or there may be a long stage of convalescence intervening. This course varies much in proportion to the nature of the disease, the constitution of the patient, and the various causes which change the character of the disorder. The first symptoms which indicate a favorable change are the disappearance, or abatement of the constitutional disturbance, cessation of pain and nervous excitement diminution in frequency and force of the pulse, cleaning of the tongue, the skin if it has been hot and dry, becomes ...

and cool, and all the organs gradually, or rapidly, according to circumstances, resume their healthy functions. In paroxysmal diseases the return to healthy action is indicated by an amelioration of the severity of the paroxysms. Emaciation is generally more obvious during convalescence, than in the height of the disease. This is probably owing to the fact that absorption is greater than the vital, the system actually loosing more, than it receives by nutrition. In local disease the most favorable termination is by resolution, but this seldom occurs except in diseases of the skin, and mucous membranes, most diseases of a local character leave a trace behind them, which though it may not materially derange the function of an organ or part, still leaves a mark which neither time, or nature can efface, and which is often observed by the anatomist, in his researches after death. Some diseases disappear very suddenly, as in some cutaneous eruptions

this is called by some writers defitescence, by others repercussion. There are other diseases which seem to be attended with one prominent symptom, which often disappears without any apparent cause very abruptly, as in Neuralgia, Rheumatism, and hemorrhages. In chronic diseases, the convalescence is often very slow and tedious, in the aged much more so than in the young, for it requires a long time for an organ that has been suffering under a lingering disease, to regain its original activity. In acute diseases on the contrary, the convalescence is often marked and rapid, the appetite which seemed entirely gone, during the progress of the disease, becomes at times voracious, and it is from want of judgment in this respect [illegible] this stage, that we often have a relapse, when the patient seems free from danger. Hence the necessity for great care on the part of the Physician, during the convales-

lescence of this patient. It is not safe to leave him in the hands of nurses, and friends. Kind friends under the control of the physician are a source of great comfort to the sick man but when left to use their own judgment often prove to be his worst enemies. With careful attention during this state, we many times see patients recover to enjoy better health than before the attack.

Sometimes there is a sudden and marked change in disease, on the occurrence of which the disease terminates speedily, this change is denominated the crisis, and the phenomena attending it is called critical. The word crisis in the original Greek signifies a judgment, or decision, hence its use in medicine to signify that in the crisis, the fate of the patient is decided. There have been so many meanings assigned to this word, and so much discussion on the subject, that it is difficult to determine

which is a correct definition. Van Swieten says the reason we do not oftner see these crises, is because we do not know how, and will not take the pains to look for them. He however does not say that they exist in all diseases. Chomel states that in the vast majority of cases which he treated of an acute form, the patients recovered without the occurrence of any remarkable phenomena. Some contend that there is no such thing as a crisis in disease. Although I have had little opportunity for observation I am inclined to think that many diseases have their termination marked by a crisis. There certainly can be no doubt in respect to the occurrence of critical phenomena. An attack of coryza is often terminated on the occurrence of a watery discharge from the nostrils, ascites with a serous discharge from the bowels, or bladder, inflammations on the occurrence of hemorrhages, and many other instances might be mentioned.

in regard to the doctrine of critical days, there is more doubt. Hippocrates and other ancient writers had an idea that disease was more liable to change on certain critical days. There seems to be some tendency to weekly periods. This doctrine has given rise to much discussion in the profession, but I believe it is now the general opinion that there are no strictly critical days.

An acute disease may end in a chronic form of the same disease as chronic rheumatism, or chronic bronchitis, these cases are often tedious and require great patience, on the part of both physician, and patient.

Disease may terminate by metastasis, which is to say disease disappears in one part, and appears in another. This term was at one time only applied to the reappearance of the same disease, and I think it should still be restricted to this application but by many it

is applied to every case in which one disease succeeds another. As examples of true metastasis may be mentioned the occurrence of hemoptysis, or hematemesis, on the cessation of the catamenia, swelled testicle on the disappearance of mumps, the successive appearance of rheumatism, and gout in different parts, or as the term is now generally used, pneumonia following typhoid fever. There have been many theories promulgated to explain this curious phenomenon, but they have generally been made subservient to the prevailing theory of the day. The humoral pathologists contended that the morbific matter was conveyed to different parts of the system through the agency of the fluids. The solidists and vitalists maintained that it was owing merely to a transfer of irritation, but the subject is still involved in mystery, which is yet to be fathomed by some exploring mind. Metastasis is more apt to appear in acute diseases, and those in which

have no definite seat, as gout and rheumatism. Its general direction is from without inwards, and must therefore at all times be looked upon with anxiety.

The last of the terminations of which I shall speak is death. This is a wonderful event, and the most powerful enemy with which the physician has to contend. Sooner or later it must come to all, for an all wise Providence has decreed that the life of all things here below, must be temporary, yet death comes not to all alike, some seem to pass away as if falling into a gentle sleep, while others die with apparent suffering and agony. Sometimes death is sudden, or it may be gradual, at times.

"Like a clock worn out with eating time
The wheels of weary life at last stand still."

but this last is not common, for in old age the system is generally feeble, and very susceptible to disease, which is very apt to prove fatal. Death may be either somatic, or molecular, that is

it may affect the whole, or only a part of the body. While the circulation continues organic organic life will be sustained, but when this ceases life must end, and when once ended, it is beyond the power of man to restore that which is lost. In order that the circulatory system shall properly perform its function, it is necessary that two other systems, viz the nervous, and respiratory, should act in harmony with it. If from any cause the function of either of these systems ceases, that of the others must inevitably come to a stand. Hence we may say that death commences in either of the systems.

Death may commence at the heart or in the circulating system. This may be owing to the deficient supply of blood sent to the heart, either from disease obstruction or hemorrhage, this has been termed death by anaemia. In these cases the heart has not lost its power of contraction but the circulation ceases because there is not sufficient quantity of blood

sent to the heart for it to contract upon. There are other cases in which the heart looses its power of contraction, this is called death by asthenia. After death in the former manner, we generally find the heart contracted, and containing little, or no blood, while in the latter, it is dilated and full of blood. The phenomena attending this mode of dying are nearly the same in both cases. The countenance and lips are pale, there are also cold sweats, dimness of vision, vertigo, a slow weak irregular pulse, and speedy insensibility, convulsions often close the scene.

Death may commence in the lungs, or respiratory system. The cause in these cases is something preventing the entrance of sufficient quantity of air into the lungs to aerate the blood. This may be owing to disease of the lungs, or air passages, or to the presence of some foreign body, and in some cases to spasm of the respiratory muscles. The blood not being properly aerated, is rendered unfit

for nutrition, and hence acts as a poison to the organs through which it passes or the organs not receiving their proper stimulus thereby cease to act. This mode of decease is denominated death by apnea. When it is sudden the following phenomena present themselves struggling efforts to breathe, which are soon followed by vertigo, and convulsions, the countenance at first is flushed, and turgid, but soon becomes livid, the veins of the head and neck are dilated the heart is the last to yield, but soon it ceases to pulsate, and all is over.

Death may commence in the brain or nervous system. This form may be traced to a variety of causes. It may be owing to pressure on the brain by a fractured bone, a tumor, or by effused blood, pus, or serum, and in many cases by congestion. This compression paralyzes the brain, causing it to loose its power of control over the various organs. Life may exist for sometime after the action of the brain has

ceased, and all consciousness is gone. This is owing to the fact, that the least vital ... are more under the control of the excito motor system of nerves, than of the brain. Still the medulla oblongata and the spinal cord, are so intimately connected with the brain, that they soon become involved. This mode of dying is generally termed death by coma. The phenomena attending it are stupor more or less profound, partial or entire loss of sensibility to external impressions, the respiration is slow irregular and stertorous, and soon ceases entirely, after this the appearances will be similar to those in death by apnea. The point at which death commences can only be distinctly traced where the event is sudden.

In gradual death the phenomena vary greatly. It is not usual comparatively speaking for the mind to remain unimpaired until death, but the sensibilities are more or less blunted, in most cases before the final struggle, as

death approaches the skin becomes cold and clammy, the respiration short and quick, and efforts are made to expel the mucous which collects in the bronchia causing a peculiar rattle, the pulse increases in [illegible], and gradually becomes more weak and irregular until, finally all pulsation ceases, if the patient is much emaciated, the countenance has the Hippocratic expression, so called from Hippocrates, who first described it. The following is his description, "his nose is sharp, his eyes sunken, his temples hollow, his ears cold and contracted the skin of his forehead tense, and dry the color of his face tending to a pale green or lead color." These phenomena may continue for two or three days or only for a few hours. In most cases the heart seems to be the last organ to yield to the destroyer, here it is that Nature toils at the pump, until exhausted, she faints, and the soul wings its way from its decaying habitation.

-equivocal of all signs is the commencing putrefaction, and where there is any doubt it is much better to defer interment, until this action has commenced. There are three states of the system which may be mistaken for death, viz syncope apnea, and trance. Syncope is a partial or temporary cessation of the action of the heart, and generally either partial or complete suspension of the circulation, and loss of consciousness. This state may continue for a few minutes or hours, and even for days. It is notable that some of the reported cases of premature burial, may have been under these circumstances. Cases are reported in which persons could faint at will. The case of Colonel Townshend related by Dr Cheyne is a remarkable instance of this kind. This patient composed himself and lay in a still posture for some time, the circulation and respiration gradually diminished, until they entirely ceased, no signs of either could be detected with the most delicate tests. This state continued for about half an hour, when the pat-

ient gradually revived. At times the diagnosis may be difficult but in such cases there is often some thing about the countenance that is life like, or by using the Stethoscope a faint sound may be heard in the region of the heart, so also when the surface is cold, a degree of warmth may be found on the surface of the mucous membranes.

Apnea as before stated occurs, when from any cause the respiration is obstructed. The venous blood circulates through the system, insensible death takes place, and the circulation ceases the face is livid, the lips purple, and dark, patches are seen in various parts, these might be mistaken for commencing mortification. Our diagnosis will be governed by the history of the case, and the present state of the patient.

Trance or Cata-

lepsy. This is a very common nervous affection and occurs more frequently in females, than in males. The phenomena attending this affection are loss of sensibility and voluntary

motion, the body becomes rigid, the limbs may be moved, but remain fixed in whatever position they may be placed, no matter how ludicrous, or seemingly uncomfortable. At times there seems to be a cessation of the circulation, and of respiration. In some cases the patient may be conscious of all that is going on around him, without the power to move a muscle. The expression of the countenance at the time of the attack is retained. Nervous patients are more liable to this affection than others. The diagnosis is not often difficult, the following signs will aid us, the rigidity, the expression of the face, the warmth which often exists in some parts of the body, and the stethoscope will be found very useful in these cases by holding a mirror before the mouth, very feeble respiration may be discovered. There exists in the minds of many persons, an idea that there is much suffering attending death, and often the countenance and movements of the patient

would seem to indicate it, but these movements are, probably automatic, for in the majority of cases the sensibilities of the patient are blunted, and the mind is in a dreamy half unconscious state, therefore the labored respiration, and the death rattle so distressing to spectators, are unheeded by the dying man in the last struggle which rends the soul from the body.

It is the duty of the physician to resist the tendency to death he should never cease to employ remedies, until the last ray of hope has expired within him. Can there be greater joy, than that experienced by a physician, when he has by his efforts, rescued a fellow mortal, from the very jaws of death, and restored him to his anxious friends.

VIII.

Dissertation
on
Induction of premature labor.

By
Henry Pierpont
of Litchfield.

1

Induction of Premature Labor

In treating of this subject, which is of more or less practical importance to every practitioner, and particularly to all who confine themselves especially to obstetrical practice, I shall [illegible] to three: first of the propriety of bringing on premature labor, [illegible] when necessary. Thirdly the [illegible] in [illegible] the object And lastly the means adopted.

First the propriety or necessity of bringing on premature labor. There can be but one opinion for any means we can use for the preservation of the life of the child without adding to the danger of the mother is most certainly [illegible] proper, and right to be carried into practice by every obstetrician. If in any case the pelvis of a woman is so much deformed [illegible] as to

render it impossible for the passage of the head of a full grown fœtus, and yet not so far lessened in its dimensions as to prevent the head of a child of much less size from passing through it: then might the operation be performed with the hope of saving the child, relieving the mother from much suffering and distress, and perhaps even saving her life.

Dr C[illegible] states that [illegible] [illegible] [illegible] pelvis are so much deformed, [illegible] seem to have a wonderful aptitude to conceive. Again in the course of his practice in several instances he had been called to the same woman in five or six successi[illegible] [illegible] to give [illegible] to the operation by which the children were to be destroyed.

He also states that a great number of instances have occurred to his observation, [illegible] [illegible] [illegible] [illegible]

in the times upon the same woman, and twice the child was born alive.

[illegible] doubted as to the morality of the practice. [illegible] perhaps [illegible] might [illegible] state that the circumstances which may under the operation necessary have not been stated with a sufficient degree of precision.

But as Dr Denman says, it is a common dictate principle: that of making an attempt to preserve the life of a child, which must otherwise be lost, and nothing being done injurious to the mother in the operation, but on the contrary a probability of reserving her suffering.

It would seem if there be a reasonable prospect of [illegible] [illegible] could be [illegible] against it, which [illegible] not apply [illegible] [illegible] against medicine in general.

Dr Denman [illegible] the [illegible] carefully

then is murder committed.

And justly does the practitioner, who operates under these circumstances, forfeit his own freedom into the hands of others who may be trusted; and by its means deprive him of the liberty of performing it again: so also does his character ever afterwards suffer the censure of the community.

But no object under the circumstances now treated of is [illegible] life. And as probably two beings can at the same time be preserved [illegible] as to the mortality when imperious necessity demands it.

[illegible]

From what has been already stated it will be seen that the operation is confined within certain limits.

Within these limits may be included cases of extreme nausea for which the life of the patient is forfeited

in eminent danger: the patient is usually bearing very large children: cases of great [illegible] hemorrhage, before the completion of the term of utero-gestation: deformity of the pelvis, and other accidental circumstances.

In distortion of the pelvis: if the cavity, though reduced in its dimensions, be of such a size as to permit the head of a full grown child, to be squeezed through it, by the force of labour and long continued pains, the operation is not required, and should hardly be thought of.

Also if the pelvis be so far lessened, as not to allow the head of a fœtus of seven, as three fingers might be [illegible] [illegible] living, then the operation cannot be attended with success: though even then it [illegible] be [illegible] from much suffering.

It is in those cases in which the pelvis is lessened in its dimensions so that the [illegible] place that a full size cannot pass: and in which it is [illegible] [illegible] reduced,

We may therefore hope if the pelvis exceed that diameter, and is well formed, that the fetus may be born alive naturally: except in some extraordinary cases as above stated.

When the patient has invariably born very large children, on account of which it has been rendered necessary to destroy the child for the safety of the mother.

Dr Ramsbotham remarks that if the conjugate diameter measures a little less than three inches, we may allow the pregnancy to advance to the end of the eighth month: if about two and three fourths inches, to seven months and a half: if about two inches and a half it must not proceed beyond the seventh: and if the space be less than two and a half inches it would be unsafe to delay our means beyond the seventh month: and he should be inclined to induce labor even sooner, as children of an earlier period have been saved.

Other instances which may render the operation

necessary, arise from deformity, and unnecessarily large children are these.

If it had occurred to the same woman in a number of successive pregnancies, to have of the death of the infant at a particular period towards the close of gestation; and the cause of the death of the child is to be attributed to any uncontrollable cause inherent to the mother, or deficiency of nutrition, the operation should be brought into consideration.

Also in other states of disease in which the life of the mother is found in imminent danger, and there is reason to suppose the danger would be aggravated by the continuance of the pregnancy, we may be warranted in having recourse to the operation.

Hamilton informs us that he has resorted to it twice, with the view of preserving the mother, in one of which cases dropsy induced it, and the other, deadly exhaustion and depressed vital powers.

Also in retroversion of the uterus.

forceps. Thus our designs being thwarted, and we at last compelled to resort to the operation of craniotomy.

Second case.

The pressure upon the funis, the membranes being sufficient [illegible] [illegible] the existence of the fetus. [illegible] and other authors [illegible] this as an objection to the too early rupturing of the membranes, even in natural labor while it is in progress. As to the efficacy of the waters in obviating pressure, while the membranes are entire, there can be no doubt; however great the pressure may be.

But as soon as the waters are evacuated, the parieties of the uterus come in close contact with the body of the child: it is therefore reasonable to suppose the umbilical funis might suffer sufficient amount of compression to destroy the life of the child.

And may be considered as one of the most grave circumstances in opposition to the success of the operation.

Thirdly. It is stated by Ramsbotham, Simpson and others, that an unnatural presentation is of more frequent occurrence when expelled before the end of gestation, than after the time is fully completed.

That at a particular period of pregnancy the fetus assumes a different position from which it seldom after varies.

At what time this periods is they do not say, though it differs in different cases.

They also remark that the fact is undeniable and state a number of cases, of which unite a proportion of those presented preternaturally to prove the assertion.

Though with my limited knowledge of the action of the parts, the assertion does not appear tenable in accordance with the rationality of their action.

As the uterus expands with the growth of the child, and as I suppose in the same proportion at one period of gestation as another:

Consequently if the fetus is able to turn at one time, why not at another; or atleast why not at any period after that time.

So on the contrary if not able at one portion of the period of gestation, what grounds can there be for the supposition, that it can at another.

Dr Barlows experience, to which Ramsbotham gives his assent, may in a measure explain why so great a proportion present unnaturally in cases, which labor has been induced. He, (Dr Barlow), remarks, and others coincide with his observations; that he is induced to believe preternatural presentations are more frequently met with in deformity of the pelvis, than when the organ is well formed: how this should have an influence on the position of the fetus is difficult to explain.

If this is the case it accounts for the great proportion of preternatural presentations in the cases reported by Dr Ramsbotham.

And conflicts with his opinion of the fetus changing its position at a certain period of pregnancy.

In unnatural presentations, as of the breech or shoulder, we should have but little hope of saving the child, in consequence of the deformity to warrant resource to the operation: for aside from the ordinary danger, the pressure on the umbilicus funis must be greater, when the head is passing the deformed strait.

Though these difficulties would deter us from making a hasty prognosis in favor of an operation, they should by no means induce us to abandon the benefits to be derived from it.

Fourthly and lastly the means adopted.

There has been several methods recommended and adopted for exciting uterine contractions by different practitioners. Some proving efficient in one case, and not in others, and others of yet certainty.

First. Abdominal frictions, manipulations with the warm bath &c.

For these have very rarely succeeded: though proper if there is the slightest hope of success: as the patient is not rendered the more unfit for any of the subsequent operations by its trial: and the more simple the operation if successful the better.

Secondly.

The separation of the membranes for two or three inches around the os-uteri.

This having proved successful, is preferred by many, its being the nearest imitation to natural labor.

Dr Hamilton remarks that he is convinced from the experience of the last ten years, if there is a sufficient portion of the decidua separated from the cervix uteri, there is no occasion for the operation of puncturing the membranes.

Dr Conquest states that he considered it as effectual as the other modes.

and much safer for the infant, as saving it from pressure during the pains.

Buckinghamson and Kluge have proposed and practiced with great success the dilatation of the os uteri by means of a piece of sponge placed within it, and maintained there by a plug in the vagina. This acting as a permanent, regular, and progressive irritation to the parts, can rarely fail to induce such an excitement as to bring about uterine action of sufficient energy to accomplish the object desired.

But even should these last two means fail there still remains room for the following operations.

That of puncturing the membranes: And from its great certainty it has been prefered by a majority of the profession.

Though Velpeau from his experience, does not consider this as certain as the dilatation with the sponge, as proposed by M. Kluge.

By rupturing the membranes the process of gestation is certainly interrupted, and that of labor comes on sooner or later: the time that elapses between the operation and labor is exceedingly various.

Sometimes commencing in the course of a few hours, again not until the lapse of two or three days and even a week.

Before operating it is necessary that we should possess an accurate knowledge of the anatomy both of the uterus and the neighboring structures. Such great care should be observed not to wound the mother or the child: and should there be a quantity of water between the membranes, and the amnion remained entire, gestation might and probably would proceed uninterrupted, consequently too much care cannot be observed in these points by the operator.

Fifthly, the administration of ergot.

This article of materia medica is very gen-
erally believed to have the power of originating
uterine contraction, when unimpregnated:
though denied it by some, who believe
that it acts only indirectly on the uterus
through the general disturbance it
occasions: having no power over the uterus
both the impregnated and the unimpreg-
nated states, except through the violence
done to the mother.

Probably there is no country in which
it has been administered more largely
than this, and by practitioners of the
greatest eminence.

From these results of cases, we are
compelled to admit, that Ergot is possessed
of expulsive properties, by which it acts
on the parturient uterus, and proves
the belief that its agencies are produced
indirectly by violence done to the consti-
tution of the mother.

Still it is deemed by many that it

is ~~not~~ capable of producing any effect upon the impregnated or unimpregnated uterus, except when parturition has commenced.

That it does on the unimpregnated I am not prepared to say.

But that it does on the impregnated, I think the majority of the testimony is in its favor. It was affirmed a few years since that in the neighborhood of Bois Croix, in France, there was during the season of eighteen forty one, an epizootic abortion among the cows, which produced much consternation among the farmers; and that, M. Bollin, director of the school of agriculture had discovered that the grain of rye, and many other of the graminae contain quite a considerable quantity of ergot.

Drs Sommerville and McFarlane have related cases in which the effects of the ergot was to force down a prolapsus so that a ligature could be applied.

Dr. T. Ramsbotham considers ergot

as capable of exciting specific power on the uterus at periods of utero-gestation: and has effected to several cases of premature labor, induced in his own practice by its use. Though he concludes, that although it may bring on labor without having recourse to any operation, yet that it does not present a more likely or indeed so probable a means of saving the infant as the operation of puncturing the membranes.

The effect of this drug on the mother, and at what periods it acts on the uterus, has not been the only topic of interest in regards to its use in parturition.

It had been maintained by many that since its introduction, the mortality of the still-born has been augmented, and that observations had sufficiently shown, that when it is given to expedite delivery, more or less danger always

IX.

Dissertation on Digestion.

By
Moses Henry Bateman
of Mansfield.

Digestion.

This subject I approach with much diffidence, & with a deep sense of my inability to do it, or any other subject connected with Medicine, justice - for it would be presumptuous in me to suppose, that I, standing, as it were, upon the very verge of its broad fields, & destitute of experience, could add much of fact or argument to the rising pillar of Medical Science.

My desire is not to touch any hard theory, for "all hypothetical speculations", according to Dr. Abercrombie, "are in their very nature directly opposed to the first principles of Philosophical enquiry". I shall endeavour to confine myself to the consideration of a few facts, relative to digestion in health, which I hope —

- may not be altogether uninteresting -

Upon the subject of digestion. all of us probably. have had some slight personal experience.

It has been said, that "every man is his own physician. or a fool at forty." This can be true however, only so far as digestion is concerned.

Before proceeding to the particular consideration of the function of digestion - it will be important to premise very briefly. some anatomical & physiological considerations. relative to the digestive organs.

The principal organs & structures concerned in the process are the teeth. salivary glands. pharynx. & Esophagus - & the great central & most important organ. the Stomach. The principal functions are. Mastication. insalivation & deglutition. The pharynx is a muscular sack or pouch. situated behind the mouth -

-and terminates in the Esophagus- This is a flexible muscular tube, passing from the Pharynx downwards between the trachea & vertebrae. After the bifurcation of the trachea it proceeds downwards between the lamina of the Mediastinum. to the diaphragm. through which it passes, & terminates in the stomach-

The Stomach- This most important organ. which has been, not inaptly, termed. the centre of sympathies. is a large incurvated sack. situated transversely in the abdomen. lying principally in the Left Hypochondriac & epigastric regions- immediately below the liver-

The Esophagus terminates in the great extremity. which lies in the left hypochondriac region. under the left lobe of the liver- The orifice here is called the Cardiac- that which opens into the intestines from the smaller extremity. the Pylorus.

The stomach is composed

-of four dissimilar laminæ. first a cov
-ering continued from the peritoneum.
within this a stratum of muscular fi
-bres. contiguous to these internally. is a
layer of dense cellular substance. called
nervous coat & last is the internal. called
villous or fungous. In this coat are situa
-ted the follicles that secrete the Gastric
-juice. The existence of this fluid. whi
-ch was formerly denied. & its solvent pow
-er over the food. has been, by the experiments
of Dr Beaumont & others. settled beyond
dispute. It is said to be not unlike la
-iva in its appearance - possessing ac
-cording to chemical analysis. a quan
-tity of free hydrochloric or Muriatic and
acetic acid. and some of the salts.

The nerves concerned in
the process of digestion - are the pneumo
-gastric or par vagum & their branches -
Any stimulant - brought in contact
with the nerves of the fauces. excites the

-muscles to contract. by the assistance of which it is propelled downwards-

When the food has been drawn downwards by the pharyngeal muscles, as far as their action extends, its further progress through the esophagus is affected by the peristaltic motion of its muscular coat- After it has passed into the stomach, it is there dissolved by the Gastric fluid. & the product of its solution. is called chyme. This, after it has passed into the duodenum. by admixture with the biliary & pancreatic fluids. undergoes an important change being seperated into that which is required to bathe & furnish the pabulum for the support of the solids. the chyle. & the excrementitious matters. that are carried through the intestinal tube. & discharged from the rectum.

Digestion - In ~~the~~ health -

All organised beings. says Carpenter

- are dependent upon a supply of food for the development & activity. The materials of which are derived from the external world".

There is a constant demand for food, the great source of which is the disintegration of the nervous & muscular tissues. which goes on under all circumstances - but varies in degree according to temperature - habits - mode of life, &c. &c. - A diet required by one who is leading a life of continual activity & exertion, when muscular power is taxed to its utmost - would be highly injurious to a person leading a sedentary life - A diet suited to the latter would be wholly insufficient to support the activity of the former - Any unusual drain upon the system, produces a corresponding demand for aliment - In Diabetis, one of the first symptoms is the craving appetite. ~~Material must be supplied~~ Extensive —

suppuration would seem to require a large supply of nutritious food to sup-port the powers of life. Material must be supplied to take the place of that which is decaying. & by a wise provission of the system is being continually thrown off.

The first step in the pro-cess of digestion is mastication. All of our food should be thoroughly mas-ticated. That it may become intimately mixed with the saliva & gastric juice. & digestion thereby, more readily progress

This exactly corresponds to the trituration that the chemist would subject any substance, that he was about to sub-mit to the action of a solvent.

The complete disintegration of the food is of great consequence. & imper-fectly performed, corresponding derange-ment of the function of digestion is lik-ly to follow. This, indeed, is one of the great causes of dyspepsia.

In order that the food may be prop-
-erly masticated & mixed with the sali'
-va. (for it is now admitted that this fluid
has the effect of commencing it's trans
-formation,) we should eat slowly, &
deliberately. If the food is swallowed be
-fore it is properly chewed, it requires a
longer time for it's solution. digestion
is impeded. which after all, is but im
-perfectly performed - The principal in
-struments of mastication, "The teeth", in
the language of another, "are designed
by nature, to grind our food, & to mix it
with the saliva, produced by numerous
-able glands, & destined to promote it's solu
-tion". If these important instruments
are lost or have become decayed, their
places should be supplied by artificial
ones - The Dentist who, by his persever
-ance, has brought to his art almost to per
fection - has conferred one of the greatest
blessings on humanity. by furnishing

-instruments to reduce the food to a state fit to enter the stomach & thus by contributing greatly to speedy & easy digestion. to the prevention of dyspepsia & consequently to a healthful constitution.

Quantity & quality - In regard to quantity of food no definite rules can be laid down. The question - what is the proper quantity? must be determined (in a measure) by every persons own experience -

Quantity & quality is much influenced by climate - mode of life - habits - idiosyncrasies &c. - In cold climates the appetite is stronger than in hot - More oily food is required to support combustion & keep up the temperature of the body.

More food is required by the robust & healthful laborer than in one who leads a sedentary life. In old age. the powers of chylosis are enfeebled. & more food is demanded to support the animal

-powers of life- Many are possessed of the powers of digestion, as to be under no inconvenience in regard to quantity, or the most heterogeneous quality, but with the generality, this is not the case. Accounts have been related by travellers, of persons having eaten an incredible amount of food at a time, that would instantly prove fatal to any ordinary person- such examples have been found in the Esquimaux, wandering Indians &c. Dr Carpenter speaks of a Hindoo, who could eat a whole sheep at a time. "But such examples of gluttony," he says, "only demonstrate the extraordinary capacity which the stomach by habit may attain". The stomach of the horse, for instance, may by peculiar management, be made to expand enormously, or contract to an exceedingly small compass. In order to increase the

-Speed & health of the horse - he is fed almost exclusively on grain, giving a large quantity of nutriment in as small bulk as possible.

It is said that every person's health depends much upon the quantity & quality of his diet - quantity in particular. That it is most conducive to health to eat sparingly, we all know from experience - "Eat not to fullness, drink not to excess" or temperance & moderation, are the golden rules of health, the good effects of which are acknowledged by all. But regarded by few! The great Author of Nature has given food & drink for our nourishment & support, but not to kill, but I have sorrowfully seen many to his own detriment pervert the use of both!

The effects of an overloaded stomach are, a sense of weight or oppression -

-dullness, laziness, sleepiness, yawning, quickness of pulse, & light fever, & sometimes nausea & vomiting. A man cannot long indulge in luxurious eating without the functions of the stomach becoming disordered, & this cannot remain in a state of derangement, without implicating contiguous organs - giving rise in the strong & robust, to inflammatory diseases, such as gout, & rheumatism, & many chronic ailments. becoming in the more delicate, the parent of a numerous progeny of distempers, affecting both mind & body, until at last, physically & mentally, he is in a state of morbid imbecility - In this state, not perceiving, or regardless of the cause of his disease, he consults the physician, when he, with the whole materia medica at his command, is unable, without proper attention to diet, to effect a cure. In the treatment of dyspepsia one of the first indications, is attention to dietetic

-regulations. Well would it be, if persons so affected, would in all cases consult the well educated & intelligent physician, instead of becoming prey to some of the innumerable quacks, who are always prowling about, & filling the country with their flaming advertisements, recommending a remedy to all who are afflicted, no matter what the disease, for their sirups, or whatever they please to call them are equally efficacious in any disease, from simple headache, to cholera, or the last stages of phthisis pulmonalis. The valetudinarian sees testimonials, (which by the way, are nearly all forged), to most astonishing cures performed by these grand catholicons. His confidence is engaged, he commences gulping down the placebos, emptying his pocket into the hands of the quack, until the delusion is driven from his mind, either by an increase of the symptoms of his disease, or the consciousness that he is receiving

-no benefit. By this time, the disease has become firmly rooted, so as to bid defiance to even temperance itself & all prescription.

The observance of the golden rules of health, temperance & moderation, is one of the best prophylactics against prevailing epidemics & upon due attention to our diet, the prevention of disease in a great measure depends.

It has been a question whether more people have not suffered from intemperance in eating, than excessive drinking? In my humble opinion, an astounding array of facts might be brought forward in support of the former part of this question. That would place it beyond dispute. I believe too, that temperance lectures, while they attempt to portray the effects of ardent spirits, in all its most direful forms, entirely overlook one of the greatest causes of disease & suffering, immoderate eating. The intemperate use of ardent spirits

I believe to be one of the greatest causes of crime & intemperate eating one of the greatest causes of disease.

Quality of food. From history we learn that different nations subsist upon different varieties of food. Some on rice & other vegetables as the Hindoz. Some on roots & bark of trees. Some on animal & vegetable oils. as the Esquimaux. & others on a mixture of animal & vegetable food.

This is the diet which seems best suited to man. for the development of his intellectual powers & physical powers. It is the principal diet upon which those nations subsist where science & art have flourished in plenitude & the brightest ornaments of mankind have existed.

From the wonderful construction of our digestive organs. it would appear. that we were designed to subsist upon a mixed diet. for substances of the most discordant principles are easily assimilated

into one bland homogeneous style. Our own instinctive propensities point to a Mixed diet. as that which is best adapted to our wants. for if we subsist upon any one particular article. for a great length of time exclusively. it will produce a loathing. even the sight of it. often disease.

This is well known to be one of the most prominent causes of scurvy. Restriction to salted meats for a considerable length of time will produce this disease. Dr. Mc Intosh remarks. that he has known scrupulous objections produced in the domestic animals by a particular manner of feeding.

Those who subsist exclusively on vegetables. do not possess that clearness of understanding. acuteness of judgement. or activity of thought. that those do they exhibit. that physical power. which characterises those whose diet is a mixed one. We may again cite the Hindoo. as an example. & a prominent example too. of

of intellectual & physical weakness.
Ten thousand of those rice-eaters have been no match for one thousand of the beef & vegetable (eating) English. We have a noble example of physical power in the aboriginees of ~~our~~ our own country. whose diet was a mixed one - and that power has been signally developed in encounters. heretofore with those terrible sons of the forest. In judging of the strength of any nation. we should first take into consideration. their habits. mode of life - quantity & quality of their food - for the power of a nation consists not in the number of her troops - or the seeming strength of her natural bulwarks. All history of the past. of nations now extinct. as well as those extant. teaches us. that indolence. intemperance & luxury. is the sure indication of the weakness of any nation & the certain precursor of its downfall.

Our digestive organs are so formed by the great Author of Nature. That we can accommodate ourselves to almost every variety of diet. & we are not to suppose that he has poured forth such a rich profusion of provisions, merely to tantalize us! but he has given them for our use, & to be used temperately. A certain quantity of fruit is allowed to be most conducive to health & longevity.

Time of Eating. We should not only eat sparingly, but according to one of my preceptors Dr Hooker. at regular & set times. & avoid repasts & pieces meals. "It matters not" he says. "whether we eat three or five times a day we should always have regular & set times for taking our food. by the observance of which rules. a person is almost sure to enjoy an easy stomach, good digestion & rarely wants an appetite.

-by the non observance of which, we see persons complaining of head ache, constipation, pain & uneasiness in the stomach & other symptoms of indigestion.

Digestion is always impeded if substances are introduced while the process is going forward. If aliment is frequently introduced, before the previous portions are half digested, the stomach will loose its tone by such frequent distention, & its contents being digested imperfectly. The chile obtained therefrom, will be impure & insufficiently elaborated; accordingly the blood will become morbid in quantity & quality. The several secretions will be unduly imposed, & a foundation thereby laid for many chronic diseases. The stomach like every other organ, must have rest.

For the solution of the food a certain quantity of drink is necessary, but like the food, it may

-be used in too great quantity, & excess in drinking, as well as intemperate eating, produces derangement in the stomach. Among the host of drinks used by man, none is so harmless, more salubrious, or better adapted to quench thirst than water. "Honest water!" "That never left man in the mire!"

"Pure water," in the language of another, a simple medicine of sovereign efficacy, is that elemental fluid, designed by nature for the nourishment of all bodies, whether animal or vegetable." In the earliest ages of the world, water & milk were undoubtedly the principal drinks used by man, but dispising natures simple, though valuable gifts, the pure & crystal springs, that are continually oozing from their rocky beds, he has sought out others to his own detriment, & too often to his ruin. Water drinkers, as well as

-those who are temperate in eating, are observed to be more healthy & longer lived than others. their faculties, both of body & mind are stronger, & they are less liable to acute & inflammatory diseases. Dr Mosely observes "I aver'd by, from my own experience, as well as the experience of many other people that those who drink nothing but water, or make it their principal drink, are but little affected by the cli-mate, can undergo the greatest fatigue without inconvenience, & are hardly ever subject to troublesome & dangerous diseases." The nervous systems of those who indulge in the habitual use of intox-icating liquors, become, as it were, pros-trated, their digestive functions are torpid they are predisposed to almost any disease with which they may come in contact, & in prevailing epidemics, they fall an easy prey to the destroyer.

But I will not stop to depict the effects of the habitual use of intoxicating liquors. The reasons and consequences of which are too well known. Wine taken in moderate quantity immediately after eating is said to promote digestion, but the stomach in a state of health needs not the assistance of artificial stimulants.

Drinks taken either too hot or too cold, as well as in too large quantity, will impede digestion.

The habitual, & immoderate use of strong tea & coffee, I believe, cannot be too strongly denounced by the medical profession. existing as they do such a decided influence upon the nervous system. producing at first an exhilirating effect. & an agreeable nervous excitement. Coffee, if taken in too large quantity, leaves after its first effects are passed, a degree of nervous derangement or depression, equivalent to the previous

-excitement, I believe this is a general law of all stimulants. Its habitual immoderate employment is well known to greatly injure the tone of the stomach; frequently giving rise to troublesome dyspeptic symptoms. The effects of the intemperate use of these articles are more evident in the female, than in the male sex. "If women knew" says a certain author (whose name I cannot call to mind,) that the predisposing cause of a numerous train of some of the most rebellious nervous diseases (of which they are too often the victims) might be traced to the habitual & intemperate use of strong tea & coffee they would shrink from them as they would from poison

The intemperate consumers of these articles, not only suffer themselves, but they entail their pernicious effects upon their offspring. In many cases of Dyspepsia, the principal cause may be traced to the use of these

-articles. & habitual indigestion. Says Dr. Lee (?)
[illegible] "is most deteriorating to the offspring.
& the most common cause of Scrofula".

The filthy habit of chew-
-ing tobacco. is considered. & I believe right-
-ly; to be most prejudicial to digestion
We cannot suppose that a substance
possessing. as this does. such powerful
acro narcotic poisonous properties. could
be taken into the system. for any great
length of time. without deranging the
function of those organs. the due per-
-formance of which. is indispensable
to ease & health.

M. H. Wakeman.

x.

Dissertation

on

The abuses of Opium.

By

Moses Clarke White Det. Med. Univ.,
Of Cardiff, New York.

Opium is one of the most important agents for the cure of disease known to the medical profession. Yet none of the bounties of Providence when abused, are capable of producing greater evil to the human family, than Opium. A large volume would hardly suffice to give a complete account, of all that is interesting in regard to this important medicine. The space allotted to this essay, will only allow me to treat of a few particulars; in doing which I shall call attention more particularly to some of the Abuses of Opium, and their means of cure.

Opium is the concrete juice from the unripe capsules of the Papaver Somniferum.

This plant is principally cultivated in Egypt, Turkey, Persia, India and China.

There are two varieties of the Papaver Somniferum from which the Opium of commerce is chiefly obtained; viz the Alba, with white seeds and white flowers, and the Nigra, with black seeds and red or purple flowers, though sometimes white.

The Papaver is mentioned by Homer, and was used by the ancient greeks as a pot herb. The earliest account of Opium being made from the Papaver is derived from the Egyptians, while its use as a medicine is mentioned by Hippocrates.

All part of the Papaver contain a milky juice, which when dried, presents much the same appearance as opium, but the green capsules only, afford the medicinal drug. Even the expressed juice of the capsules, especially if nearly ripe, is of inferior quality while that from other parts of the plant is entirely destitute of the peculiar properties of opium.

When the petals of the poppy have all fallen off, and before the capsules are fully grown, or begin to ripen, the opium-gatherer makes oblique or perpendicular incisions in each capsule at evening or after their colour fades, and in the morning scrape off the concrete juice, which, exuded, hangs in tears around the incisions. If the capsules were incised in the morning the heat of the sun would by drying the juice too rapidly, seal up the incisions and prevent the proper exudation

of the juice, so that but little opium would be obtained.

The coolness of the night air, especially if the sky is clear and dew falls, allows a copious flow of the opium juice. In some countries it is said that the capsules are incised but once, but in India they are incised three different days.

After the juice is collected from the capsules, it only requires to be dried in the shade and afterwards to be kept excluded from the air to be ready for use.

In the various provinces of India where opium is raised, the juice, instead of being immediately dried, is kept for sometime (in Malwa it is mixed with a portion of oil and hung up in double bags) and then taken to the manufacturing establishments where it is subjected to a kneading process, by which it is intimately mixed and brought to a uniform consistence, when it is made into balls and having been sufficiently dried, it is boxed up for market. During the kneading process it is often adulterated. If it is kept in this manner (as in India) before it is sufficiently dried, the moisture it contains causes a slight fermentation, which partially changes the active properties of the drug.

The opium grown in wet gloomy seasons is much inferior to that procured in dry seasons. The production of good opium, requires a cool dry atmosphere. In India the poppy is grown only during the winter months. Opium raised in elevated situations among the Himala mountains is superior to that raised on the plains of India. Difference of climate is probably the principal reason why Turkey opium is superior to Egyptian, and common India opium; though the quality of the soil, diligent husbandry and plentiful irrigation combine with the climate to make one variety of opium superior to another. "Hill Opium" raised among the Himalas at an elevation of six or eight thousand feet, has been found by surgeons in India, far superior to any other in the treatment of dysentery. The different state of the atmosphere will also in part account for the fact that some specimens of opium raised in Scotland were found superior to the far famed opium of Turkey.

The chemical composition of opium is very complex. According to the United States Dispensatory

The following proximate principles are found in opium viz 1. morphia; 2. narcotina or narcotin; 3. codeia; 4. paramorphia; 5. narcein; 6 meconin; 7. meconic and sulphuric acids; 8. a peculiar acid not yet fully investigated 9. extractive matter; 10. gum; 11. bassorin 12. a peculiar resinous body insoluble in ether and containing nitrogen; 13. fixed oil 14. a substance resembling caoutchouc; 15. an odorous volatile principle besides lignin and a small proportion of acetic acid sulphate of lime, sulphate of potash, alumina, and iron. Besides these principles. Pelletier announced the discovery of another which he called pseudomorphia, but which appears to be only an occasional constituent of opium."

Of these ingredients, morphia is considered as by far the most important. It is generally found united with meconic acid, though in Egyptian opium it is united with sulphuric acid. Narcotin and codeia are considered next in importance to morphia. Opium which contains a large percentage of morphia, is generally valued for medicinal purposes, but recent investigations would seem to show

that the proportion of morphia as compared with the amount of narcotine, is also to be considered, as well as the absolute amount of morphia.

There is reason to suppose that fermentation, and the chemical manipulations employed in analysis, cause new combinations, producing proximate principles not originally existing in crude opium. For example codeia is extracted from opium together with morphia in the process for obtaining muriate of morphia. Treating these mixed muriates with ammonia, morphine is precipitated and codeia retained in solution. and yet in Lowig's Organic Chemistry the composition of morphia and codeia are given as identical, for each is said to consist of $NC_{36}H_{20}O_6$ codeia requiring however two equivalents of water when it takes the crystaline form. Other chemists give the composition of codeia slightly different from morphia. Exposure to moist air and long keeping diminish the amount of morphia that can be obtained from opium. This shows that the constituents of which morphia is composed readily enter into new combinations hence the importance of procuring the newest opium, and keeping it excluded from the air.

The following simple approximables tests of the purity of opium are taken from a pamphlet on Malwa opium by Elijah Impey, Esq. Surgeon in the Bombay Medical Service & 1846. "Good opium when held to a spirit lamp, lights almost instantly like a candle gives out elopiant gas in great quantity burning in powerful jets all over its surface with a bluish white flame; it swells to twice its bulk, is exhausted quickly losing about three fifths of its weight, and leaves a greyish coke like substance, several drops of black sticky tar are deposited on the forceps holding it, and the odor that is given out resembles that of ignited naptha, the ashes break up very easily into an impalpable powder. Impure opium on the other hand, will scarcely burn by itself, requires to be lighted very frequently. The gas is less, is extricated quickly, and the smoke and tar are in greater proportion, it either swells out to a very great extent, or very little retaining the shape of the piece employed the ash is dull black and cannot be pulverized by the fingers." The expressed juice of the poppy, which when dried resembles opium, and is often mixed with it is not inflammable. The Chinese method

of testing opium, is to take a small quantity and prepare it in the usual method of making the "smokable extract". This is done by boiling the opium in water, filtering the solution, and then evaporating it to the consistence of honey. When thus prepared, if of good quality, it readily ignites, burning with a clear flame. Malwa opium, if pure, yields about seventy percent of the "smokable extract" while other varieties of opium yield little more than fifty percent.

Dr. Pimpey in the work above quoted, expresses the opinion that in the process for making the "Chinese smokable extract" the alkaline and other crystalizable vegetable principles, which alone are soluble in boiling water, form combinations possessing activity in an increased degree, far more vigorous than the single effect of any one ingredient [illegible] of morphine. I am not aware that any chemical analysis has been made, to determine the composition of opium as prepared by the Chinese for smoking. It should be mentioned that the Chinese after the first solution of the opium, evaporate it to dryness, or nearly so, working and turning it with a spatula, then soak it for twelve hours in cold water

then boil in water and dissolve again, and remove the scum which rises in boiling, and again evaporate to the consistence of honey, when it is ready for smoking. This whole process - boiling, drying, roasting, soaking in water and boiling again, might well be supposed to produce new chemical combinations, and we should expect the drug thus prepared to have a different effect from crude opium taken into the stomach. We know that a considerable portion of the narcotine is left behind in the dregs of the opium. Extensive adulterations of opium have led the profession to use generally some preparation of morphine, where it will answer as well, and the commercial value of all varieties of opium for medicinal purposes is generally determined by chemical tests for ascertaining the percentage of morphia. Turkey Opium has long held the highest reputation and has been adopted as officinal in prescriptions. Pereira has however stated that India Opium, especially that obtained from the provinces of Malwa, contains when pure, more morphia than Turkey Opium. In Ranking's Half yearly abstract for 1846 it is

stated that a variety known among medical men in India, as "Hill Opium", raised among the Himalayas at an elevation of [illegible] thousand feet, contains a much greater proportion of morphia, as compared with its narcotina, than Turkey Opium of the best variety. It contains about the same percentage of morphia as Turkey Opium, and only about one third as much narcotina. It also contains a peculiar aromatic odor. This variety of Opium is said by Dr. McGregor to be "peculiarly calculated for reducing inflammatory action in the mucous coat of the bowels, and he employed it in most stages of dysentery among Europeans with the happiest results."

Dr. Sutherland says of it that "there can be no doubt that much of the virtue arises from the deficiency of narcotina exhibited. Analysis however may not always account completely for a specific virtue, which I am inclined to attribute to the drug in question, and which may depend upon the aggregate, as well as the proportionate value of its component parts. Nor is it impossible that the aromatic quality found in this variety may exert a beneficial influence when in apposition with diseased mucous membranes."

The delicate flavor of opium, is much affected by the soil in which it is grown, and the quality of the water with which the plants are supplied during the growing season. The natives of India suppose the opium to derive a tinge from the color of the grain taken off the ground the previous year; hence the produce of many fields is brought together, and intimately mixed by kneading before it is sent to market. The Chinese are exceedingly fastidious to notice the peculiar flavor of different varieties, as wine drinkers observe the delicate flavor of their favorite wines. I have been informed by a dealer in India opium, that opium raised in China has a more deleterious effect upon those who use it, than opium grown in India; but I am not aware that any analysis of Chinese Opium has been made to determine what may be its chemical peculiarity. Pure Malwa opium contains more of the "smokable extract" than Patna, or Benares, but it is much more adulterated. Patna and Benares opium, are both prepared for market at the establishments of the East India Company, and are prepared of standard purity. There is no great difference between these varieties, and the difference in price depends

[illegible] upon the different weight of the opium packed in the different chests. Turkey opium is less valued by the Chinese than Patna or Benares. In some parts of China, Malwa opium can scarcely be sold at any price, while at other places the people want no other.

I have been told by one who has long been engaged in merchantile business in China, that considerable India opium is sent to England via Turkey and then sold as Turkey opium.

Medicinal effects of Opium.

These may be briefly stated in the language of the "United States Dispensatory".

1st "It is an excitant in its primary action. — — —

2d "It relieves pain more speedily and effectually than any other medicine with which we are acquainted." I suppose that Ether & Chloroform should be here excepted.

3d Another very important indication which beyond any other narcotic it is capable of fulfilling, is the production of sleep. — — — — — — — — — — — —

4th Opium is powerfully antispasmodic. — — — —

5th Probably depending upon a similar influence over the nervous system, is the property which it possesses

of allaying general and local irritation, whether exhibited in the nerves or bloodvessels, provided the action do not amount to positive inflammation; and even in this case, it is sometimes prescribed with advantage. - - - -

5th In suppressing morbid discharges, it answers another indication which fits it for the treatment of a long list of diseases. - - - - 7th It remains to mention one other indication, - that of producing perspiration, - in fulfilling which, opium conjoined with small doses of emetic medicines, is preeminent. No diaphoretic is so powerful as a combination of opium and ipecacuanha. But a medicine possessed of such extensive powers, may do much injury if improperly directed; and conditions of the system frequently occur, in which, though some one of the symptoms calls for its use, others on the contrary are incompatible with it."

Opium has been used as a medicine ever since the days of Hippocrates; yet it has been often a subject of discussion, whether opium is to be regarded as a stimulant, or as a sedative. The truth appears to be, that its action depends in general, on the quantity taken, the frequency of repetition, and the state of the system when it is administered. What to persons

in health, if the dose be small, it is a stimulant seems unquestionable and this is proved by the fact that habitual opium eaters consume it for its primary stimulant effect, and not for the sake of the depression languor and suffering which succeed." See Penny by clopeded". On the contrary, it appears equally certain, that if a dose is taken which is large in proportion to the susceptibility of the system, its operation is decidedly sedative. The period of excitement, if existing at all, is of so short duration, while the sedative effect comes on so soon and is so clearly marked, that this medicine in these circumstances is to be regarded as a powerful sedative.

Opium as a Poison.

When opium is taken in a large dose, either by accident or for criminal purposes, it acts as a powerful narcotic poison, destroying life in from six to twelve hours. Cases have occurred where death took place in three hours, and in a few cases life has been prolonged to twenty four hours. According to Dr. Christison "The symptoms of poisoning with opium, when it has been administered at once in a dangerous dose, begin with giddiness and stupor, generally without any previous stimulus. The stupor rapidly

increasing the person becomes motionless and insensible to external impressions, the breathing very slowly, generally lies quite still, with the eyes quite shut, and the pupils contracted, and the whole expression of the countenance is that of deep and perfect repose. As the poisoning advances, the features become ghastly, the pulse feeble and imperceptible, the muscles exceedingly relaxed, and unless assistance is speedily procured death ensues." This statement of Dr. Christison implies that stimulus does sometimes occur before narcosis. I have myself observed, powerful arterial and muscular excitement precede stupor in poisoning with opium where the patients were disturbed by the interference of friends who desired to save their lives. It is also stated that when poisonous doses of opium are given to children, death is often preceded by convulsions. I have also myself seen in one case death (said to have been) caused by opium, preceded by great pain, wildness, and anxiety of the countenance, and muscular contortions. I had however, some doubt whether opium was the cause of death, though the testimony of the friends was positive that this was the cause. The occurrence of death in cases of poisoning with opium, is attended (and sometimes preceded) by oozing of froth from the mouth and nostrils.

Treatment of Poisoning with Opium.

When called to a person who has taken a poisonous dose of opium, the first indication is, to evacuate the Stomach. If the patient is not already comatose, this can generally be effected with two or three doses of Sulphate of Copper, in gr V doses, dissolved in a pint or more of warm water. If the first dose does not produce emesis in from three to five minutes, a second dose should be given. If emetics do not act promptly the Stomach pump should be used, clearing the Stomach and then injecting a solution of tannin, or other vegetable astringent, and then washing out the Stomach till the water comes off clear. In my opinion the use of emetics, where they will act promptly (as they have in my hands in almost every case where the patient could swallow) is better than the Stomach pump, as they do more to arouse the whole system and counteract the constitutional effects of the poison. But if the patient is comatose, or emetics do not readily act, the Stomach pump should be used to remove the poison and thoroughly wash out the Stomach, using for this purpose a solution of tannin or any astringent infusion which may be at hand. Tannin is the only proper antidote to opium, but even this is never to be trusted

without evacuating the stomach. Where ordinary emetics are not at hand, salt and water, and mustard given freely will often answer the purpose. The Chinese, besides these use the green pulp of the aloe plant, and in bad cases give the patient the blood of a duck. Whether blood given in this way acts as an emetic, or whether it acts by enveloping the poison and rendering it inert is uncertain. But though suicide with opium is exceedingly common in some parts of China, the Chinese treatment is not often sufficiently energetic to relieve the patients.

While emetics are being administered, mustard may be rubbed freely upon the chest and epigastrium. Liq ammonia may be used in the same manner, or applied to the nostrils to arouse the patient. After the stomach has been freely evacuated diffusible stimulants as carbonate of ammonia or ether, may be administered if required. Dashing cold water in the face, pouring it over the head and back, flecking the hands and feet, or even the face, with a wet towel, calling the patient in a loud voice, free access of cold air, causing the patient to walk about between two assistants if necessary, and all other means required to keep the patient awake, are to be employed in the most energetic manner. In many

cases where the patient is stupid, with slow respiration pulse feeble and quick, venesection gives decided relief. If all these measures fail, galvanism will aid to arouse the patient if suitable apparatus is at hand. Artificial respiration is sometimes resorted to with success when life seemed about to expire, but it must be kept up very carefully till the spasmodic efforts begin to keep off. If recovery take place the patient complains of general uneasiness pain in the head & stomach and a creeping, itching, sensation over all parts of the system. In this stage strong tea or coffee may be freely given, and in a few hours the patient is out of danger. A case is related by an aged physician of this state, where he was called to a patient, two hours after he had taken an ounce of laudanum. He was insensible, no emetic could be swallowed, and no stomach pump was at hand. In this case, repeated flagellation restored and sustained consciousness till the effects of the laudanum passed off, and the patient recovered.

The smallest dose of opium known to have produced death in an adult is gr. IV/5, while one drop of laudanum has produced death in an infant of peculiar constitution.

The ordinary dose of "Smokable Opium" ~~estimated~~ taken into the stomach by the Chinese who wish to commit suicide, is about one drachm, while those who have been accustomed to smoking opium frequently take more.

Habitual Use of Opium.

It is said that the collectors of opium are pale, and afflicted with tremblings, yet it is said that those who labor in the preparation of opium for the market, are robust, and enjoy good health. If opium be heated, the odor evolved is said to be fatal to the lower animals, so also men have fallen down in a state of insensibility from breathing an air charged with the vapor of opium while performing some pharmaceutical processes.

I have observed in China among English Opium Traders that they are troubled with habitual costiveness, headache, and neuralgia, though I am not aware that daily contact with opium produces among the traders any of the stimulating and exhilarating effects experienced by those who eat or smoke opium.

Opium Eating prevails most extensively in Mohammedan countries where the use of alcoholic drinks is forbidden to the people by their religion.

multitudes of the people eat opium with as great infatuation as in other countries people are addicted to the use of alcoholic stimulants. Some tribes of the Himalayas eat or drink opium with their food, and if they are abundantly supplied with wholesome diet they enjoy robust health, and they themselves think (perhaps justly) that the opium they use gently stimulates the system and promotes digestion. There is considerable reason to think that when alcoholic stimulants (and perhaps tea and coffee fancy opium) are taken with the food, in small quantity, in a hot climate, as they are taken in Eastern India, they are by no means as injurious as in colder countries. When, however, opium is taken in excess, and especially when taken frequently, and not with the food, it disturbs and debilitates the whole digestive and nervous systems. The effect of the opium manifests itself one or two hours after it has been taken, and lasts from four to six hours. In persons who use it habitually, it produces a high degree of animation, and when they sleep they fancy themselves enjoying all the delights of Paradise. The habitual and excessive use of this drug produces a total attenuation of body. A yellow

countenance, a lame gait, bending of the spine, frequently to such a degree as to assume a circular form, and glassy deep-sunken eyes betray him at the first glance. The digestive organs are deranged, the appetite fails, the bowels are constipated and the sexual organs lose their power. As the habit becomes confirmed, the strength of the patient fails, the craving for the stimulus becomes excessive, and to produce the desired effect, the dose must be from time to time gradually augmented. After long indulgence the opium eater becomes subject to neuralgic pains, to which opium itself gives no relief. When this habit has been long indulged, it is almost impossible to break it off. The torments of the opium eater when deprived of his stimulant, are as dreadful as his bliss is complete when he has taken it. The habit may however be abandoned, and medical treatment may restore the system to its normal condition. It requires however strong resolution to go through the suffering that precedes restoration to health. Like the use of spirits, or tobacco in any form, it is best to abandon it at once, and depend on other medicines and proper regimen to restore the system.

Opium smoking is practiced principally by the Chinese, though some tribes of the Indian Archipelago and Eastern Asia are more or less addicted to the same habit. The watery extract mentioned above, is the form used by the Chinese, and is considered milder than the crude opium of commerce. Opium smoking is said to be more fascinating than opium eating and its effects are generally less injurious.

The opium pipe consists of a tube of bamboo or heavy wood, pierced at the head with a small cavity, in which the residuum collects after combustion; this end serves to elevate the bowl to the lamp in the process of smoking.

The bowl is made of earthenware of an elliptical form, and is set into the side of the tube by a narrow neck. The outer side of the bowl is pierced with a small hole, for the entrance of the smoke. The smoker reclines upon a couch and holds the pipe so near a low lamp that the bowl can be brought to the flame of the lamp without stirring himself. A little prepared opium of the size of a pea, being taken on the end of a spoon headed needle is placed over the orifice in the bowl of the pipe, and pierced with the other end of the needle. It is then held over fire at the lamp and quickly inhaled, so that none

of the smoke shall be lost. Old smokers will retain the smoke a long time, filling the lungs and exhaling the fumes through the nose and in some cases through the eyes and ears. When the opium on the pipe has burned out, the smoker lies listless for a moment while the fumes are dissipating, and then gets up and goes about his employment, or repeats the process till he has taken his accustomed dose. Temperate smokers resume their physical or intellectual labors with increased vigor, while the stimulant effect of the opium lasts, and this state appears longer continued than where the smoker yields himself to a regular debauch and smokes till narcosis is produced. Temperate smokers experience frequent thirst, and as the habit grows upon them there is discharge of mucous from the nose and eyes with a general tremor. Loss of appetite with debility, and intense craving and uneasiness when they cannot obtain their regular allowance of opium. It is said that the sleep of the opium smoker is without dreams and that in this respect there is a remarkable difference between smoking, and eating, opium, yet the Chinese have pictures to represent the dreamy vagaries of the

opium smoker. The opium smoker presents a dull dreamy appearance, and if he does not have exhilarating dreams under the influence of opium, the Chinese pictures may relate to a kind of daydreaming. The effects of opium upon confirmed smokers who use it in excess may be stated as follows. The first effect of inhaling the opium fumes, is increased fullness and activity of the circulation, the pulse rising to about ninety in a minute. This stage, there is reason to believe, is attended with priapism, but not with secretion from the testicle. The smoker soon becomes loquacious and breaks out into boisterous silly merriment which gradually changes to a vacant palsied and sinking of the features, and as the narcotic effect gradually comes on, the pulse sinks to its ordinary standard, and then still lower, and becomes softer and smaller than ordinary, while a deep sleep supervenes for a varying period of from half an hour to three or four hours. No refreshment is felt from this sleep after the habit of smoking becomes inveterate, but there is a universal sinking of the powers both of body and mind. According to the testimony of a Chinese

scholar, opium is taken at first to raise the animal spirits and prevent lassitude, but he sums up its bad effects upon habitual smokers thus, "It exhausts the animal spirits, impedes the regular performance of business wastes the flesh and blood, dissipates every kind of property, renders the person ill-favored, promotes obscenity, discloses secrets, violates the laws, attacks the vitals and destroys life. In comparison with arsenic, I pronounce it tenfold the greater poison; one takes arsenic because he has lost his reputation and is so involved that he cannot extricate himself. Thus driven to desperation he takes the dose and is destroyed at once. It may be compared to raising the wick of a lamp, which, while it increases the blaze, hastens the exhaustion of the oil and the extinction of the light. Hence the gourmand who smokes will shorten their own days, cut off all hopes of posterity leaving their parents and wives without any one on whom to depend. From the robust who smoke, the flesh is gradually consumed and worn away and the skin hangs like a bag. Their faces become cadaverous and block [rather sickly" as I think the word should be translated in this connection according to common usage among the Chinese] their

face brown naked as billet of wood. The habitual smokers doze for days over their pipes without appetite; when the fit for opium comes on they cannot resist its impulse. Mucus flows from their nostrils, and tears from their eyes; their very bodies are rotten and putrid".

This is evidently strong language, and describes extreme cases, but is a fair representation of the common sentiments of multitudes of Chinese who denounce the use of opium, and foreign merchants who furnish the drug, in the strongest terms their language affords.

"The thirst and burning sensation in the throat which the wretched sufferer feels, only to be removed by a repetition of the dose, proves one of the strongest links in the chain which drags him to ruin. At this stage of the habit his case is almost hopeless; if the pipe be delayed too long, vertigo complete prostration, and discharge of water from the eyes ensue; if entirely withheld cold sweats and aching pains are felt over the body an obstinate diarrhœa supervenes and death closes the scene.

The disastrous effects of the drug upon the constitution are to be somewhat delayed or modified by the quantity of nourishing food the person can procure, and consequently

it is among the poor, who can least afford the pipe, and still less the injury done to their energies that the destruction of life is the greatest." See Williams' Middle Kingdom.

Opium smoking does not generally produce that lameness, and distortion of the spine which occurs in opium-eaters. Yet I have been told by one who has long been engaged selling India opium in China, that the opium which is grown in China, causes distortion of the features and hands with occasional loss of their use.

There is a remarkable difference in the effects of opium smoking upon different races of people. In reference to the Chinese it may be said that opium smoking does not produce the intoxication of ardent spirits, and so far as the community and his family are concerned the smoker is less troublesome than the drunkard; The opium smoker never throws the chairs and tables about the room, or drives his wife out of the room in his furious rage; he never goes reeling through the streets, or takes lodgings in the gutter; But contrariwise, he is quiet or pleasant, and fruitful only when the effects of the pipe are gone. The reverse of this is said to be the case with some of the Malays who, under the influence of the fumes of opium

become perfectly furious and endanger the lives of all who come near them. If so the fact is owing wholly to difference of constitution or temperament or whether the Malays smoke the opium in its crude state, including all the gums and narcotine which are removed by the Chinese mode of preparation I am not certainly informed, but my impression is that I have been told that the Malays smoke the opium in its crude state, or mixed with tobacco, but that they do not prepare it in the Chinese method. This subject requires further investigation. In the Chinese method of smoking opium a thick tarry substance of very heavy narcotic odor collects in the interior of the ellipsoid bowl of the opium pipe, which, if taken into the stomach is more poisonous than common opium. It may be that in the Malay method of smoking opium in the tobacco pipe, more of this tarry substance finds its way into their lungs. I am not aware that any analysis has been made to show the chemical constituents of this tarry residuum. We are told in books that "the Chinese and Japanese use opium as an aphrodisiac" this subject needs further investigation as there

are apparent contradictions in statements by different writers. The Chinese writer above quoted says it promotes obscenity." The opiumists who are now endeavoring to overthrow the Tartar Dynasty say in their books, that the use of opium is intimately connected with breaches of the seventh commandment, hence they regard that commandment as virtually forbidding the use of opium. On the other hand the Chinese writer quoted above, says, that the youth who smoke opium "will shorten their days and cut off all hope of posterity". Rev. C.W. Bradley A.B.C.F.M. U.S. Consul at Amoy made many inquiries of habitual opium smokers in regard to this question, and the general testimony was, that the long continued use of opium diminished the sexual propensity, and sometimes nearly obliterated it, yet he found one man who had been a habitual opium smoker for twenty years, and yet he had had several children born during that period.

From another source we learn that the passions are sometimes stimulated to an inordinate extent by smoking opium. From all the facts we have been able to collect I infer, 1st that opium in sedative doses allays sexual excitement, 2d that opium smoking causes

erethism and sexual excitement while its stimulating effect continue, but that the secretions of the internal organs are not correspondingly increased, and the prospect of offspring is not increased by the use of opium. Furthermore, it appears very evident, that the continued use of opium suppresses all spermatic secretion and impotence not unfrequently results. Yet opium smoking produces a species of excitement, sought after by those who give themselves up to voluptuous pleasures.

"We know that long continued use of opium dries up the secretions of the intestinal canal, and yet when the use of opium is suddenly abandoned increased secretion from the intestinal canal comes on, causing often alarming diarrhea, the discharges being of an unnatural character. We also the seminal secretions having been diminished or suppressed by the long continued use of opium, when the habit is abandoned the secretion returns in an unnatural form, and very troublesome spermatorrhoea is the result. From all these considerations I conclude that opium is not, and cannot be, used as an aphrodisiac in the proper sense of that term, though it is used to produce a spurious kind of excitement.

The habit of opium smoking (like that of opium eating) is exceedingly enslaving. The whole physical system is in a diseased condition, the mental and moral powers are enfeebled, and the poor enslaved victim has generally no energy or resolution to break away from the chains which bind him. Some try to break off the fatal habit by taking a solution of opium in spirits, and gradually diminishing its strength till it is left off entirely; others mix opium with tobacco and smoke the compound in a less and less proportion till tobacco alone is left. I have myself seen placards in the streets of Ichehanfu in China urging the people to abandon the use of opium on the principle of gradually mixing other substances with it, and diminishing the amount of opium daily till tobacco or some harmless substance alone is used; but I have heard many declare that they found it impossible to conquer the habit in this way. Another plan, said to be more effectual, has been tried by Dr. Hetton an English missionary physician at Ichehan. He requires the patient to give up his opium pipe, and obtain a bottle, and at once, from the use of opium. He then furnishes the patient a compound consisting of one part gum camphor, mixed with three parts of yellow wax, a small piece of this

of the size of a pea is to be mixed with tobacco and smoked in the tobacco pipe, several times a day, according to the urgency of the symptoms which succeed the abandonment of opium. The stimulating effects of the camphor counteract the depressing symptoms experienced in abandoning the use of opium. These pellets are gradually diminished in size and frequency till the patient is relieved of his slavish habit, and the "vis medicatrix naturae" restores the health and strength of the patient. I have not seen the patients who are said to have been cured by this method, but think it probable that cures may be effected in this way where the habit has not become very strong, and the opium disease has not become very severe. I was told by Rev. S. Johnson that efforts were sometimes made in Siam to cure opium smokers by mixing six grains of tartar emetic with a drachm of prepared opium, and allowing the person to smoke it in the usual way. This produces in a short time violent vomiting, followed by extreme disgust of the opium pipe, so much so, that for five or six days any attempt to smoke even pure opium, is followed by renewed vomiting. I have tried this method on a

considerable number of patients, but after the vomiting I administered freely tonics and astringents to remove debility, and prevent the occurrence of diarrhea, and considerable success attended this practice.

The son of a wealthy Chinese salt merchant who had himself been cured of opium smoking by some medicine, (I could never ascertain what) given him by an English captain, came to me, and represented that two of his father's clerks, to whom he was much attached, were addicted to opium smoking, and that his father would instantly dismiss them from his employment if he discovered that they were accustomed to smoke opium; he requested therefore that I would furnish some medicine to cure them. I gave tartar emetic to be mixed with their opium. It produced the effects above mentioned, and cinchona and astringents which I administered freely restored their health. Nearly four years afterwards, I was told that they still continued free from their former habit of opium smoking. Others whom I have treated in the same manner, have testified to its beneficial and satisfactory results. It is to be mentioned that

five or six days after the vomiting produced by smoking
tobacco with opium, the appetite for the drug
returns and there is no further tendency to vomit.
It is during the interval, when the patient loathes
the opium pipe, while he possesses the ability to abstain
from it, that we are to endeavor by the use of tonics stimu-
lants and astringents, combined with deobstruents
to remove the depraved state of the system, so that
the returning health and strength may enable him
to abstain from his pernicious habit, and obtain
a complete cure.

D. J. Macgowan M.D. an American medical
missionary at Ningpo has devoted much attention
to the cure of opium smokers, and with a greater
degree of success than any other physician with
whose practice I have become acquainted. The
following is an outline of his course of treatment
communicated to me by himself in a letter bearing
date July 5. 1848. He says in regard to treating
opium smokers, My practice is to require the applicant
to abstain from food for twenty four hours before
attempting anything for his relief; making very large

promises, and saying everything I can think of to encourage him; & in this way more than half the applicants decline the trial, but all such would turn back a few stages further on. Having then men of some resolution, and unquestioned sincerity, to manage, the treatment is quite simple. They complain of great soreness in the bones, in the small of the back especially, disposition to yawn, want of sleep and appetite, and great depression. Ammonia and a little wine keep them till the third day, when they often have diarrhea and increase of pain and weakness, also nocturnal emissions of semen. Wine and quinine, with a large dose of Dovers powders (gr XV & XX) with many encouraging words, answer for a day or two longer, when they are put on the Sulphine ferri. After the tenth or twelfth day it is not necessary for them to call daily. The cure is effected in fifteen or twenty days; in fact, by their own resolution -- my prescriptions merely combatting their dreadful sufferings. I can point to robust healthy men cured long ago -- men who were mere skeletons. In his Report

of the hospital practice, published in 18 D. Mr. further says "The most interesting part of my labors in a moral, if not a professional point of view has been the treatment of opium patients, several hundreds of whom are living witnesses to the success of the means employed for their relief. Not a few of these are of several years' standing; men too who are occupied all day in labor requiring great muscular activity and from whom every vestige of the characteristic features of the opium victim have been effaced. Some whose vital powers were nearly exhausted, are now stalwart chair-bearers, disenthralled from the deadly vice and once more in the enjoyment of existence. This success has been mainly owing to the stringent conditions with which they are made to comply in order to their reception as patients. Only the most resolute, or those who impoverished by the expensive vice, are outcasts, and destitute alike of means of procuring the drug, and even the necessaries of life; persons who have no other resource, and to whom existence is a burden, are found willing to submit to the ordeal. No opiate

is ever administered to assuage the agony which the immediate and total deprivation of the charming stimulus occasions, except Dovers' powder which is given to check the wasting diarrhœa, an inevitable sequence of abstinence from opium in the habitual smoker. The agony of the poor creatures is indescribable, yet animated by hope on the one side, and terrified by the prospect of an early and miserable death on the other, a majority of them endure it all until a natural appetite for wholesome nourishment is excited, when they may be considered safe. During this period they are sustained by various stimulants. It is quite possible to effect the cure of an opium-smoker by administering opiates in doses gradually reduced, which is the method pursued by native practitioners, but persons who have been relieved of the habit in this manner are prone to relapse, making their condition more hopeless than ever."

I have heard the testimony of others in regard to the healthy appearance of those Dr. Macgowan has cured of opium smoking. He has as porter in his Dispensary, a fine healthy man, whom he found

a miserable wretch just on the borders of the grave as the result of opium smoking. Dr M. spoke kindly to that degraded man, inspired him with hope of escaping the tyrant power of opium, put him under his system of treatment and actually cured one of the most hopeless cases which could have well been selected. We have other means which have been found effectual to some extent, for the cure of the disease induced by the habitual use of opium. Each of these methods of treatment has its special advantages for different classes of patients but it is to be hoped that further investigations and observations made by medical missionaries in all parts of China and by the profession generally will lead to the discovery of more effectual methods of relieving the sufferings induced by the abuse of opium.

Of late years the use of opium in England and America has increased to an extent which is the cause of just anxiety and alarm, and we too as a people may soon be deeply interested in the means of curing patients addicted to the abuse of opium.

We wish to know the causes which all bringing this evil upon us. As a general thing I believe

neither opium eaters nor opium smokers are addicted to the use of ardent spirits: But the Turks use great quantities of strong coffee and the Chinese are almost constantly sipping their tea, while the nations of India who cultivate opium but have little tea or coffee use far less opium than the Turks and Chinese.

Caffein the proximate principle of coffee and theine the proximate principle contained in tea, are found by analysis to consist of the same identical elements viz $N_4 C_{16} H_{10} O_4$. Does the use of tea and coffee containing these identical principles produce among the Turks and Chinese a peculiar state of the nervous system that makes them fall into the habitual use of opium more readily than other nations? Is it the increased use of tea and coffee, which have come to be regarded as necessaries of life in England and America, that has favored the increased use of opium among us?

We have thus taken merely a hasty glance at our subject, but it is sufficient to show that a vast field is yet to be explored in regard to the abuses of opium, and the

means of curing the evils it inflicts upon
the human family.

Moses Clarke White

Medical Institution of Yale College
Jan. 26th A.D. 1854

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